TECHNICAL REPORT

Exact Parametric Confidence Intervals for Bland-Altman Limits of Agreement

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ABSTRACT

Purpose. The previous literature on Bland-Altman analysis only describes approximate methods for calculating confidence intervals for 95% Limits of Agreement (LoAs). This paper describes exact methods for calculating such confidence intervals, based on the assumption that differences in measurement pairs are normally distributed. **Methods.** Two basic situations are considered for calculating LoA confidence intervals: the first where LoAs are considered individually (i.e. using one-sided tolerance factors for a normal distribution); and the second, where LoAs are considered as a pair (i.e. using two-sided tolerance factors for a normal distribution). Equations underlying the calculation of exact confidence limits are briefly outlined. **Results.** To assist in determining confidence intervals for LoAs (considered individually and as a pair) tables of coefficients have been included for degrees of freedom between 1 and 1000. Numerical examples, showing the use of the tables for calculating confidence limits for Bland-Altman LoAs, have been provided. **Conclusions.** Exact confidence intervals for LoAs can differ considerably from Bland and Altman's approximate method, especially for sample sizes that are not large. There are better, more precise methods for calculating confidence intervals for LoAs than Bland and Altman's approximate method, although even an approximate calculation of confidence intervals for LoAs is likely to be better than none at all. Reporting confidence limits for LoAs considered as a pair is appropriate for most situations, however there may be circumstances where it is appropriate to report confidence limits for LoAs considered individually.

Key words: exact confidence limits; Bland-Altman limits of agreement; two sided tolerance factors; one sided tolerance factors

In 1983, Altman and Bland[1] described a technique for comparing two different methods of making a clinical measurement. A follow-up paper, Bland and Altman (1986)[2] described the method with further detail, also describing its applications for analysing repeatability data. The method is now very widely used in medicine and eye research. The 1986 paper has since been cited more than 23000 times, including a good representation of clinical ophthalmic literature. For example, three ophthalmic journals are represented in the top 25 journals for citing the paper: Investigative Ophthalmology and Visual Science (ranked 9th with more than 180 citing papers), Optometry and Vision Science (ranked 13th with more than 160 citing papers) and Ophthalmic and Physiological Optics (ranked 24 with more than 130 citing papers).[3]

The method will be discussed in more depth below, but briefly, Bland-Altman plots take the following format. On each member of a group of participants, the measurements are made using each method. For each pair of measurements the difference is calculated and this difference is then plotted against the average for each pair of measurements. It is common practice to show the mean of the differences on the plot as a reference line. It is also common practice to show 95% Limits of Agreement (LoAs). LoAs provide researchers with a way of assessing the range of variability between the two measurements. They can be evaluated or compared with pre-determined tolerances to decide whether given techniques have clinically acceptable agreement or repeatability.[4] LoAs are calculated as the mean of differences $\pm$ 1.96 standard deviations of the differences. In their 1986 paper[2] Bland and Altman stated that "if the data are normally distributed then 95% of differences will lie between these limits". Armstrong et al[5] state that the LoAs represent the range "in which it would be expected that 95% of the differences between the two methods would fall." It is likely that most authors and readers think about the LoAs in this fashion, but neither of these explanations is strictly true. The LoAs on a Bland-Altman plot are only sample estimates of what the LoAs in a population might be. The LoAs in a sample, particularly for small sample sizes, may vary considerably from the population

LoAs. Moreover, for samples smaller than infinity, the sample estimates of an LoA will be biased estimates of the population LoA. On average, they will tend to be slightly closer to the mean of differences than the population LoA would be. So, if authors are using LoAs as an estimate of the range over which one would expect 95% of differences to lie, or if readers are likely to interpret LoAs in this way, then it is useful to have a method of estimating how reliable the sample LoAs are. One way of doing this is to estimate confidence intervals for the LoAs. Confidence intervals describe the range over which a given parameter (in this case an LoA) is likely to lie in a population with a given probability (usually 95%). In their 1986 paper[2], Bland and Altman described an approximate method for calculating such 95% confidence limits for LoAs and described the derivation of the method in a 1999 paper[6]. McAlinden et al[7] , in a paper which is one of the author statistical guidelines for *Ophthalmic and Physiological Optics*[8] , recommended Bland and Altman's method with the following strong terms: "As the limits of agreement are only estimates, confidence intervals *should* be calculated and reported" (italics added), and in a subsequent letter further justified the uses of confidence intervals for LoAs.[9] Other authors have also highlighted the value of using confidence intervals in interpreting the practical significance of LoAs[4], one arguing that "limits of agreement should never be presented or interpreted without confidence intervals and that the inclusion of confidence intervals should become standard practice in the literature."[10]

Despite the apparent value of confidence intervals for LoAs, they are not widely reported. A brief search of Optometry and Vision Science showed one paper[11] that reports confidence limits for Bland- Altman LoAs, using Bland and Altman's approximate method, but the vast majority of papers using Bland-Altman methods do not, including a paper to which the current author contributed.[12] This is not unique to the optometric literature, for example in a review of 42 method comparison papers that used Bland-Altman analysis in anaesthesia journals, only 2 papers reported confidence intervals for LoAs.[4]

Nevertheless, especially for small sample sizes, confidence intervals for LoAs may be a useful metric for researchers to consider. However, as will be seen, for such small sample sizes, Bland and Altman's approximate method does not accurately describe confidence intervals for LoAs. It is one of a number of parametric methods in the literature for calculating confidence intervals for LoAs, all of which are approximations [2, 6, 7, 13-16] and most of which are based on assumptions that a large sample size is used for estimating LoAs.[2, 6, 7, 14, 15] Also, most of these methods for calculating confidence intervals for LoAs are based on an implicit assumption that one is only considering only one LoA in a pair[2, 6, 7, 14-16], a process known as determining one-sided tolerance factors. For the main application of Bland-Altman analysis, authors and readers are interested in considering LoAs as a pair, and in the likelihood that 95% of the population lies between the LoAs, a problem which can be considered as determining two-sided tolerance intervals. To date, only one author has specifically provided an approach to determining confidence intervals for LoAs considered as a pair, using an approximate method.[13] However, given the standard Bland-Altman assumption of normally distributed data, and without assuming large sample sizes, it is possible to calculate exact confidence intervals for LoAs considered individually and as a pair, using techniques described in the literature on estimating one- and two-sided tolerance factors for a normal distribution. [17-20] To date in the literature, there has been no description of how to apply these methods of calculating exact confidence intervals for Bland-Altman LoAs.

Therefore, the purpose of this paper is to describe, in a way that will be useful for clinical scientists, how to calculate exact confidence intervals for Bland-Altman LoAs considered either individually or as a pair, based solely on the standard Bland-Altman assumption of normally distributed data. Such methods will be most useful for small sample sizes, but can be applied appropriately for any sample size. As an example for readers, the different methods will be applied to Bland and Altman's 1986 data set[2] and contrasted with Bland and Altman's approximate method.[6] Tables will be provided which simplify the calculations of confidence intervals for LoAs. Finally, examples from ophthalmic clinical sciences literature will be used to show the value of calculating confidence intervals for LoAs based on moderate and small sample sizes.

A Brief Background on Bland-Altman Plots

For readers who are unfamiliar with the method, this section contains a brief description of Bland-Altman plots, as background. Figure 1 shows the principles of the method, using the data originally provided and analysed by Bland and Altman (1986)[2]. The data are Peak Expiratory Flow Rate (PEFR) measurements made with a Wright peak flow meter, and also with a Mini Wright peak flow meter on 17 patients (n=17). The typical Bland-Altman analysis shown in Figure 1 has the difference d between the two meters (Wright- Mini Wright) plotted on the y-axis and the mean $\mathrm{x}_{\mathrm{ave}}$ of the two measurements plotted on the x-axis. A horizontal reference line showing the mean of the differences (in this case $\bar{\mathrm{d}}$ = -2.1 liters/minute) is typically included on Bland-Altman plots. For the data in Figure 1, the standard deviation of the differences $\mathrm{s}_{\mathrm{diff}}$ was 38.8 liters/minute.

Bland-Altman plots usually also include horizontal lines to denote 95% Limits of Agreement (LoAs). If the data were distributed normally and sample sizes were very large, one would expect approximately 95% of the differences (d) in the sample to lie within 1.96 standard deviations (i.e. $1.96\ \mathrm{s}_{\mathrm{diff}}$) from the mean of differences $\bar{\mathrm{d}}$. Thus the upper LoA is given by:

Upper LoA=$\bar{\mathrm{d}}$+1.96 $\mathrm{s}_{\mathrm{diff}}$

which in this example $=-2.1+1.96$x38.8 = 73.9 liters/minute. The lower LoA is given by:

Lower LoA=$\bar{\mathrm{d}}$-1.96 $\mathrm{s}_{\mathrm{diff}}$

which in this example $=-2.1-1.96$x38.8 = -78.1 liters/minute.

These LoAs, as shown in Figure 1, are actually slightly different from those shown in Bland and Altman (1986)[2], because they used the slightly more conservative, and easier to calculate, LoAs of $\bar{\mathrm{d}} \pm 2\ \mathrm{s}_{\mathrm{diff}}$. Most authors currently use the more precise definition: $\bar{\mathrm{d}} \pm 1.96\ \mathrm{s}_{\mathrm{diff}}$.

The mean of differences $\bar{d}$ and LoAs are statistics that describe characteristics of the data sample itself. However, for many cases, researchers and readers are concerned with how these statistics describe the population from which the sample is drawn.[21] This can be done by using the information in the sample to estimate confidence intervals for a given parameter. Confidence intervals describe the range over which a parameter is likely to lie with a given probability, often 95%.

It is very common practice to calculate 95% confidence intervals for a mean such as $\bar{d}$. This is accomplished, assuming a normal distribution of data, using the standard error of the mean and the t-distribution, using the equation:

$$\bar{d} \pm t_{0.975,n-1}\frac{s_{diff}}{\sqrt{n}}.$$

For the data in Figure 1, the critical t value for 16 degrees of freedom is 2.12. This gives a confidence interval from -22.0 to 17.8 liters/minute, indicated by error bars on the $\bar{d}$ line in Figure 1. In other words, it can be said that there is a 95% probability that the population mean μ_d for d values lies between -22.0 and 17.8 liters/minute.

It is also possible to calculate 95% confidence intervals for LoAs, using the assumption that the data are distributed normally. Bland and Altman[2, 6] described an approximate method for estimating such confidence limits and an example is shown as error bars on the LoAs in Figure 1. This approximation is based on the assumption that underlying differences d are distributed normally and that the variance of the difference is independent of the difference itself, and on the assumption that the sample size is large. It is possible, using these assumptions, to approximate the standard error for an individual LoA as $\sqrt{3}\frac{s_{diff}}{\sqrt{n}}$ [2] or more precisely as $\sqrt{2.92}\frac{s_{diff}}{\sqrt{n}}$.[6] The approximation assumes that the probability density function for σ_{diff} is normally distributed, and that the probability density function for $\bar{d} + 1.96\ \sigma_{diff}$ is distributed as a *t* distribution. These assumptions are approximately true for large values of n. The equations for confidence intervals by this approximate method from Bland and Altman(1999)[6] are:

Upper LoA$\pm t_{0.975,n-1}\sqrt{2.92}\frac{s_{diff}}{\sqrt{n}}$

Lower LoA$\pm t_{0.975,n-1}\sqrt{2.92}\frac{s_{diff}}{\sqrt{n}}$

In Figure 1 these give approximate 95% confidence intervals, symmetrically distributed around the LoAs, ranging from 39.8 to 108.0 liters/minute for the upper LoA and for the lower LoA, between -44.0 and -112.2 liters/minute.

Exact confidence Intervals for Upper or Lower LoAs Considered Individually

Bland and Altman's approximate method is derived using an implicit assumption that one is calculating a confidence interval for either the upper LoA or the lower LoA, but not both at the same time (i.e. LoAs considered individually). Owen [20] described the problem (for the upper LoA) as: Given a sample estimate of the mean (in this case $\bar{d}$) and a sample estimate of the standard deviation (in this case s_{diff}) what value of k fills the criterion that a minimum proportion, P, of the population is less than $\bar{d} + ks_{diff}$ with a confidence γ? For Bland-Altman 95% LoAs, P=0.975 (corresponding to a Z score of 1.96) and for two-tailed 95% confidence limits, k values are determined for $\gamma = 0.025$ and $\gamma = 0.975$. The same k values could also be used to determine 95% confidence limits for the lower LoA as $\bar{d} - ks_{diff}$. Even though this is typically determining two-tailed confidence limits, formally this process is known as determining “one sided tolerance factors for a normal distribution” [20], because only one LoA is being considered at a time (either the upper or lower LoA). For Bland and Altman’s approximation:

k≅ 1.96+ $t_{0.975,n-1}\frac{\sqrt{2.92}}{\sqrt{n}}$ for $\gamma = 0.975$

and k≅ 1.96 - $t_{0.975,n-1}\frac{\sqrt{2.92}}{\sqrt{n}}$ for $\gamma = 0.025$.

As stated above, Bland and Altman’s method may be inaccurate if n is not large. In fact, there are closer, but numerically more complicated approximations than Bland and Altman’s, which can be used for determining confidence limits for LoAs considered individually (e.g. the Method of Variance Estimates Recovery (MOVER).[14,15]

However, such approximations may be unnecessary, because the exact 95% confidence intervals for LoAs (considered individually) can be exactly estimated, for any sample size, large or small, assuming a normal distribution of the population from which d is drawn. Using Owen’s[20] equations, k can be determined for a P value of 0.975 using a non-central-t distribution. For different values of γ, appropriate critical values are equal to k where:

$$Pr\{(noncentral\ t\ with\ \delta = Z_{0.975}\sqrt{n}) \le k\sqrt{n}\} = \gamma$$

As an aid for researchers, coefficients $c_{0.025}$ and $c_{0.975}$ have been calculated as k values corresponding to γ values of 0.025 and 0.975. These coefficients are included in Table 1 for different degrees of freedom $\upsilon = n - 1$. Table 1 also includes $c_{0.05}$ and $c_{0.95}$ which could be used to compute 2-tailed 90% confidence limits or 1-tailed 95% confidence limits and also $c_{0.5}$ which may be used for determining median values for the confidence interval. The values have been computed to finer than the 10^{th} decimal place using MATLAB and rounded to 4 decimal places in the table. Table 1 is abridged, but a more complete set of tables is available as a supplementary file (Appendix table 1, available at **[LWW insert link]**). Similar tables have been published to 3 decimal places by Odeh and Owen[18] and in part, with small inaccuracies, by Owen[20]. As a further aid to researchers a supplementary file contains MATLAB code for calculating coefficients found in Table 1. (MATLAB Kcalculator code, available at **[LWW insert link]**).

The exact and approximate confidence intervals differ for small subject numbers. To show this, the probability density function for the exact confidence interval for LoAs (considered individually) is shown in Figure 2B, along with the probability density function for the approximate method (Figure 2A), assuming n=5 (or degrees of freedom $\upsilon = 4$) and given $\bar{d} = 0$ and $s_{diff} = 1$. The 1.96 line in Figure 2 shows the limit of agreement.

By way of example, exact confidence intervals for 95% LoAs, considered individually, are shown in Figure 1, calculated as follows.

For the upper LoA, exact 95% confidence intervals are given by $\bar{d}$+$c_{0.025}$ s_{diff} and $\bar{d}$+$c_{0.975}$ s_{diff}.

For the lower LoA, exact 95% confidence intervals are given by $\bar{d}$-$c_{0.025}$ s_{diff} and $\bar{d}$-$c_{0.975}$ s_{diff}.

From Table 1, for 16 degrees of freedom, $c_{0.025}$ = 1.3150 and $c_{0.975}$ = 3.1483. So, in Figure 1, for the upper LoA, 95% confidence intervals are bounded by $-2.1 + 1.3150 \times 38.8 = 48.9$ liters/minute and $-2.1 + 3.1483 \times 38.8 = 120.0$ liters/minute. For the lower LoA, 95% intervals are bounded by $-2.1 - 1.3150 \times 38.8 = -53.1$ liters/minute and $-2.1 - 3.1483 \times 38.8 = -124.2$ liters/minute.

Figures 1 and 2 illustrate a number of general differences between the two methods for calculating LoA confidence intervals (considered individually). Firstly, exact confidence limits will be asymmetric about the LoAs, in contrast to the symmetry of Bland and Altman’s approximate method. The inner bound for the exact 95% confidence interval will always be closer to the LoA (and smaller than the approximate inner confidence interval) than the outer bound (which will always be larger than the corresponding approximate confidence interval). However, this asymmetry becomes smaller as sample size increases. As a guide, for LoAs considered individually, the difference between exact and approximate 95% inner confidence limits becomes less than 0.1 s_{diff} when degrees of freedom become greater than 37. The difference between exact and approximate 95% outer confidence limits becomes less than 0.1 s_{diff} when degrees of freedom become greater than 44.

In addition, the total magnitude of the approximate 95% confidence interval (the difference between inner and outer bounds) is always slightly smaller than the total magnitude of the exact confidence interval. This difference in total magnitude becomes smaller as n increases, being less than 0.1 s_{diff} for degrees of freedom greater than 13.

Exact Confidence Intervals for Upper and Lower LoAs Considered as a Pair

Bland-Altman LoAs are usually considered as a pair of bounds, and so it may be more appropriate for many applications to treat them as a pair when calculating their confidence limits. However, the methods demonstrated so far in this paper only estimate confidence intervals for LoAs considered individually. However, there are methods in which the confidence intervals are obtained for the LoAs considered as a pair. These arise from the literature on what is formally known as “two-sided tolerance factors for a normal distribution.” The problem can be stated as: given a sample estimate of the mean (in this case $\bar{d}$) and a sample estimate of the standard deviation (in this case s_{diff}) what value of k_t fills the criterion that a minimum proportion, P, of the population lies between $\bar{d} \pm k_t s_{diff}$ with confidence γ.[20]

Ludbrook[13] was the first to apply this two-sided tolerance factors approach to the problem of calculating confidence limits for Bland-Altman LoAs. He used existing tables[22] to provide an upper 95% confidence limit (i.e. a one-tailed bound) for LoAs considered as a pair. These tables contained approximate coefficients, being reproductions of tables from Bowker[23] published in 1947. The coefficients in Bowker's tables were calculated using approximate methods described by Wald and Wolfowitz[19]. However, for values of γ, the coefficients k_t can be calculated exactly by determining the value of k_t which satisfies the equation

$$\frac{2\sqrt{n}}{\sqrt{2\pi}}\int_0^{\infty} \mathrm{P}(\gamma, k_t|\bar{x})\, e^{-1/2 n\bar{x}^2}\, d\bar{x} = \gamma$$

Where $\mathrm{P}(\gamma, k_t|\bar{x}) = Pr\left\{\chi^2 > \nu r^2 / {k_t}^2\right\}$

And r is the root of the equation.

$$P = \int_{\bar{x}-r}^{\bar{x}+r} \phi(t)dt$$

Where is $\phi(t)$ the standard normal probability density function.[17, 24]

Table 2 contains coefficients calculated by the author with MATLAB, using these equations and the method described by Odeh.[17] Degrees of freedom have been defined as $\upsilon = n - 1$. Values for k_t, rounded to 4 decimal places, were calculated for P=0.95 by iterative methods for γ values accurate to within 8 decimal places. Coefficients $c_{t_{0.025}}$, $c_{t_{0.05}}$, $c_{t_{0.5}}$, $c_{t_{0.95}}$, $c_{t_{0.975}}$are the k_t values corresponding to γ values of 0.025, 0.05, 0.50, 0.95 and 0.975. Similar tables have previously been published for exact $c_{t_{0.5}}$, $c_{t_{0.95}}$ and $c_{t_{0.975}}$ to 3 decimal places[17, 18], and also for approximate[19] $c_{t_{0.95}}$values to 3 decimal places.[23] Table 2 is abridged, but a more complete set of tables is available as a supplementary file (Appendix table 2, available at **[LWW insert link]**).

As a further aid to researchers a supplementary file contains MATLAB code for calculating coefficients found in Table 2. (MATLAB Ktcalculator code, available at **[LWW insert link]**).

The above equations have also been used to derive Figure 2c, which shows the probability density functions for LoAs considered as a pair given $\bar{d} = 0$ and $s_{diff} = 1$, assuming n=5 (or degrees of freedom $\upsilon = 4$).

This approach of calculating confidence limits for LoAs considered as a pair is probably most suitable, in general, for determining confidence intervals for Bland-Altman LoAs. Confidence limits can be given by $\bar{d} \pm c_{t_{0.025}}\, s_{diff}$ and $\bar{d} \pm c_{t_{0.975}}\, s_{diff}$.

Using the data in Figure 1 as an example, with $\nu = 16$ one can calculate a 2.5% lower bound using the $c_{t_{0.025}}$coefficient 1.4900 to determine there is a 2.5% probability that at least 95% of the differences in the population lie between the bounds of $-2.1\ \pm 1.4900 \times 38.8$ liters/minute, i.e. $-2.1\ \pm 57.8$ liters/minute. One could also calculate a 97.5% upper bound using the $c_{t_{0.975}}$coefficient 3.0824 to determine there is a probability of 97.5% that at least 95% of the differences in the population lie between the bounds of $-2.1\ \pm 3.0824 \times 38.8$ liters/minute i.e. $-2.1\ \pm 119.6$ liters/minute. Thus there is a 95% probability that at least 95% of the differences in the population lie outside the limits of $-2.1\ \pm 57.8$ liters/minute (-59.9 and 55.7 liters/minute) and inside the limits of $-2.1\ \pm 119.6$ liters/minute (-121.7 and 117.5 liters/minute). These confidence limits have been included as a pair of error bars on the LoAs in Figure 1.

Figures 1 and 2 show subtle differences between exact confidence intervals for LoAs considered individually and as a pair. These differences are also apparent when comparing Table 1 and Table 2.

The exact confidence intervals for LoAs, considered as a pair, will also differ from those obtained by Bland and Altman's approximate method, but the difference depends on sample size. The sample size at which this difference is acceptable, and at which the methods become interchangeable, will be a matter of judgement for researchers. As a guide, however: for LoAs considered as a pair, the difference between exact 95% inner confidence limits and Bland and Altman's approximation becomes less than 0.1 s_{diff} when degrees of freedom become greater than 112. The difference between exact and approximate 95% outer confidence limits becomes less than 0.1 s_{diff} when degrees of freedom become greater than 26. In addition, the total magnitude of the approximate 95% confidence interval (the difference between inner and outer bounds) is smaller than the total magnitude of the exact confidence intervals, for degrees of freedom less than 8, and is larger for all other degrees of freedom. This absolute difference in total magnitude is less than 0.1 s_{diff} for degrees of freedom of 7, 8 and 9 and for degrees of freedom greater than 150.

DISCUSSION

It is good practice to calculate confidence intervals for Bland-Altman LoAs, especially if the sample size is small. The LoA calculated for a sample is only an estimate of the LoA for the population from which the sample is drawn and it is useful for researchers and readers to have an understanding of how much the LoAs in the population may vary from the sample LoAs.

This paper has described a number of approaches to calculating confidence intervals for Bland-Altman LoAs, and the method chosen by researchers will depend, to some extent, on what aspects of the data the researchers wish to highlight.

Occasionally researchers might adopt an approach of determining confidence intervals for LoAs considered individually where they are especially concerned with inferences about either the top or bottom of the range of differences. An example might be comparing a new technique of tonometry with a pre-existing standard such as Goldmann tonometry and considering the range over which the new technique underestimates Goldmann pressures (and as a consequence there may be a chance of missing elevated IOP). In such situations the coefficients contained in Table 1 may be useful.

However, for most applications researchers will be concerned about both upper and lower LoAs and under these circumstances it is more appropriate to calculate the confidence limits for LoAs considered as a pair. This approach may fit best with the underlying principles of Bland-Altman analysis which generally involves determining a pair of LoAs. To illustrate where such calculations are useful, confidence intervals have been calculated for Bland-Altman limits of agreement for some previously published data sets.

The first comes from a recent study by Bandlitz et al [25] of techniques for measuring tear meniscus radius with a newly developed technique: PDM and with an existing technique VM. Figure 3 shows a Bland-Altman plot comparing *in vitro* radius measurements taken from 5 glass capillary tubes using the different instruments. The figure is as originally published, with the addition of confidence intervals calculated using coefficients from Table 2, plotted as error bars on the LoAs. The sample size (n=5) is relatively small to base the estimate of LoAs on, and calculating confidence intervals for LoAs may be useful under such circumstances. The mean of differences was 0.0002 mm with an estimated SD_{diff} of 0.0205 mm. LoAs are shown at 0.0404 mm (confidence interval +0.0256 mm to 0.1264mm) and -0.0400 mm (confidence interval -0.0252 mm to -0.1260 mm). One could say, based on this sample, with 95% confidence, that in the population the LoAs could have been as wide apart as +0.1264 and -0.1260 mm, or as close together as +0.0256 and -0.0252 mm. The authors made no comment interpreting the LoAs, beyond presenting the data, but if they had included the confidence intervals, readers would have seen that LoAs in the population are reasonably likely to lie considerably further from the mean of differences. A range of +/- 0.126 mm may still be acceptable LoAs in the science of meniscometry, but it is useful for readers to know the range when interpreting the research.

Figure 4 shows Bland-Altman plots, taken from a recent study of retinal oxygen saturation measurements obtained from specialized fundus imaging in 18 subjects.[26] The figure shows intra-session variability in the measurements from retinal arteries in frame A, and retinal veins in frame B. The error bars were not in the original figure, but have been included to show the confidence limits for LoAs using the exact method and Table 2. Means of differences were 0.3% (with SD_{diff} of 5.0%) for arteries and -0.6% (with SD_{diff} of 8.0%) for veins. LoAs (with 95% confidence intervals) were 10.1% (7.8% to 15.5%) and -9.6% (-7.2% to -14.9%) for arteries and 15.0% (11.4% to 23.6%) and -16.2% (-12.6% to -24.8%) for veins.

In the original paper, the discussion section makes the observation that: "Furthermore, our analysis showed for the first time that there was no bias between (or within) recording sessions *and that 95% LoAs are generally lower in arteries.*" (Italics added.) There is not, currently, an appropriate inferential statistic to determine the specific question of whether the LoAs differ from one data set to another, (although a number of tests have been developed to assess the simpler question of whether variance is different between two samples[27]), but some guidance may be obtained from the confidence intervals. On the basis of the presented data, a claim that LoAs are different (for arteries and veins) is difficult to sustain, because of the overlap between the confidence intervals.

This is in contrast to the next example, a pediatric ocular biometry report[12], in which the repeatability of ultrasound measurements (Echoscan) of axial lengths in children were compared with partial coherence interferometry measurements (IOLmaster) of axial length. This is shown as repeatability Bland–Altman plots in Figure 5, as originally published, except for the addition of confidence intervals (again calculated from Table 2) for LoAs drawn as error bars. For 37 subjects, 2 measurements were repeated with each instrument. The IOLmaster tends to give quite repeatable results with a lower LoA of -0.05mm (with a CI of between -0.04 mm and -0.06 mm) and an upper LoA of +0.04mm (with a CI of between 0.03 mm and 0.05 mm). Echoscan gives less repeatable results. The mean of differences was -0.094 mm and the SD_{diff} was 0.388 mm. The lower LoA was -0.85 mm (with a CI of between -0.71 mm and -1.09 mm). The upper LoA was 0.67mm (with a CI of between 0.53 mm and 0.91 mm). In this case, the addition of confidence intervals supports the initial paper's inference that IOLmaster had better repeatability than Echoscan measurements of axial length because the outer 95% confidence intervals for the IOLmaster LoAs lie well inside the inner 95% confidence intervals for Echoscan LoAs. In addition the confidence intervals may help readers in planning future research, or making comparisons with other studies, because they provide estimates for where the LoAs might be expected to lie in the population.

CONCLUSIONS

This paper has described exact parametric methods for determining confidence intervals for LoAs. As an application to Bland-Altman analysis the methods have only been partially described before using approximate coefficients[13], although the numerical techniques are well established. [17, 18, 20] This exact parametric method may be best but even an approximate calculation of confidence intervals for LoAs is likely to be better than none at all.

Researchers may find the new technique useful, especially for small sample sizes. Whether they decide to use confidence limits for LoAs either considered as a pair or considered individually, or exact or approximate methods, authors should always describe the method used for their calculations. In addition, authors should recognize that readers may wish to consider alternative inferences from their data. By reporting $\bar{d}$, s_{diff} and *n* values, authors will give readers the information that can be used for alternative calculations of confidence intervals for LoAs.

Finally, authors should consider whether it is useful to include a set of error bars in their Bland-Altman plots, to show confidence intervals for LoAs as in Figures 1,3,4 and 5, or merely to report the confidence intervals as values. While they are a convenient way to show the confidence intervals, error bars themselves can be interpreted in a number of different ways, e.g., representing standard deviations or standard errors. Authors should take care to explain in figure legends what the error bars represent and the method used for calculating them.

APPENDIX/SUPPLEMENTAL DIGITAL CONTENT

Appendix table 1, listing coefficients for calculating exact 95% confidence intervals for 95% LoAs considered individually, for different degrees of freedom $v = n - 1$, is available at **[LWW insert link]**. Appendix table 2, listing coefficients for calculating exact 95% confidence intervals for 95% LoAs considered as a pair, for different degrees of freedom $v = n - 1$, is available at **[LWW insert link]**. MATLAB Kcalculator code, for calculating coefficient values in Table 1 and Appendix table 1 is available at **[LWW insert link]**. MATLAB Ktcalculator code, for calculating coefficient values in Table 2 and Appendix table 2 is available at **[LWW insert link]**.

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Table 1. Coefficients for calculating exact 95% confidence intervals for 95% LoAs considered individually, for different degrees of freedom $\upsilon = n - 1$. (This table is abridged. A more complete table is attached as Appendix table 1, available at **[LWW insert link]**.

ν	$c_{0.025}$	$c_{0.05}$	$c_{0.50}$	$c_{0.95}$	$c_{0.975}$
1	0.5226	0.7109	2.8197	31.2575	62.5576
2	0.7126	0.8748	2.3205	8.9861	12.8162
3	0.8349	0.9825	2.1862	6.0150	7.7095
4	0.9232	1.0606	2.1244	4.9085	5.9749
5	0.9912	1.1208	2.0891	4.3291	5.1109
6	1.0459	1.1693	2.0662	3.9696	4.5916
7	1.0913	1.2094	2.0502	3.7228	4.2432
8	1.1299	1.2434	2.0384	3.5417	3.9918
9	1.1632	1.2728	2.0293	3.4025	3.8009
10	1.1924	1.2986	2.0221	3.2915	3.6505
11	1.2183	1.3214	2.0162	3.2007	3.5285
12	1.2415	1.3418	2.0114	3.1248	3.4272
13	1.2625	1.3602	2.0073	3.0603	3.3416
14	1.2815	1.3769	2.0038	3.0046	3.2682
15	1.2990	1.3922	2.0008	2.9559	3.2044
16	1.3150	1.4063	1.9982	2.9130	3.1483
17	1.3299	1.4193	1.9959	2.8748	3.0985
18	1.3436	1.4313	1.9939	2.8405	3.0541
19	1.3565	1.4426	1.9921	2.8095	3.0140
20	1.3685	1.4530	1.9904	2.7814	2.9777
25	1.4187	1.4969	1.9842	2.6716	2.8370
30	1.4574	1.5305	1.9801	2.5949	2.7395
35	1.4883	1.5574	1.9772	2.5376	2.6672
36	1.4938	1.5621	1.9767	2.5278	2.6549
40	1.5139	1.5795	1.9750	2.4929	2.6111
50	1.5542	1.6144	1.9720	2.4268	2.5285
60	1.5848	1.6408	1.9700	2.3797	2.4701
70	1.6092	1.6618	1.9685	2.3441	2.4260
80	1.6292	1.6790	1.9675	2.3160	2.3913
90	1.6460	1.6934	1.9666	2.2931	2.3632
100	1.6604	1.7058	1.9660	2.2740	2.3397
120	1.6840	1.7260	1.9650	2.2438	2.3026
140	1.7026	1.7419	1.9642	2.2207	2.2744
160	1.7178	1.7549	1.9637	2.2023	2.2520
180	1.7305	1.7657	1.9633	2.1873	2.2337
200	1.7414	1.7750	1.9630	2.1747	2.2184
250	1.7628	1.7933	1.9624	2.1504	2.1889
300	1.7789	1.8070	1.9620	2.1327	2.1675
350	1.7915	1.8177	1.9617	2.1192	2.1510
400	1.8018	1.8265	1.9615	2.1083	2.1379
450	1.8104	1.8337	1.9613	2.0994	2.1272
500	1.8177	1.8399	1.9612	2.0919	2.1181
1000	1.8578	1.8739	1.9606	2.0519	2.0700

Table 2. Coefficients for calculating exact 95% confidence intervals for 95% LoAs considered as a pair, for different degrees of freedom $\upsilon = n - 1$. (This table is abridged. A more complete table is attached as Appendix table 2, available at **[LWW insert link]**.

ν	$c_{t_{0.025}}$	$c_{t_{0.05}}$	$c_{t_{0.50}}$	$c_{t_{0.95}}$	$c_{t_{0.975}}$
1	0.9744	1.1237	3.3756	36.5192	73.0772
2	1.1051	1.2333	2.6342	9.7888	13.9396
3	1.1839	1.3004	2.4157	6.3411	8.1045
4	1.2397	1.3481	2.3080	5.0769	6.1569
5	1.2825	1.3847	2.2428	4.4222	5.1983
6	1.3170	1.4142	2.1988	4.0196	4.6276
7	1.3457	1.4387	2.1670	3.7455	4.2478
8	1.3702	1.4596	2.1429	3.5459	3.9757
9	1.3915	1.4778	2.1239	3.3934	3.7706
10	1.4102	1.4938	2.1085	3.2728	3.6100
11	1.4269	1.5081	2.0958	3.1747	3.4805
12	1.4419	1.5209	2.0852	3.0931	3.3736
13	1.4555	1.5325	2.0761	3.0241	3.2837
14	1.4680	1.5431	2.0682	2.9649	3.2069
15	1.4794	1.5529	2.0614	2.9135	3.1405
16	1.4900	1.5619	2.0554	2.8683	3.0824
17	1.4998	1.5703	2.0501	2.8283	3.0311
18	1.5089	1.5780	2.0453	2.7925	2.9854
19	1.5175	1.5853	2.0410	2.7603	2.9445
20	1.5255	1.5922	2.0371	2.7312	2.9075
25	1.5593	1.6210	2.0223	2.6187	2.7654
30	1.5856	1.6434	2.0122	2.5414	2.6685
35	1.6070	1.6615	2.0050	2.4844	2.5975
36	1.6108	1.6647	2.0038	2.4747	2.5855
40	1.6247	1.6766	1.9995	2.4404	2.5429
50	1.6530	1.7006	1.9918	2.3762	2.4637
60	1.6747	1.7191	1.9866	2.3312	2.4084
70	1.6922	1.7339	1.9829	2.2975	2.3671
80	1.7066	1.7461	1.9800	2.2712	2.3350
90	1.7188	1.7564	1.9778	2.2499	2.3090
100	1.7293	1.7653	1.9761	2.2323	2.2876
120	1.7466	1.7800	1.9734	2.2046	2.2539
140	1.7603	1.7916	1.9715	2.1836	2.2286
160	1.7716	1.8012	1.9701	2.1671	2.2085
180	1.7811	1.8092	1.9690	2.1536	2.1923
200	1.7893	1.8161	1.9681	2.1424	2.1788
250	1.8055	1.8298	1.9665	2.1210	2.1529
300	1.8177	1.8401	1.9654	2.1055	2.1342
350	1.8273	1.8483	1.9646	2.0937	2.1200
400	1.8352	1.8549	1.9640	2.0843	2.1087
450	1.8418	1.8605	1.9636	2.0766	2.0994
500	1.8474	1.8652	1.9632	2.0701	2.0917
1000	1.8786	1.8915	1.9616	2.0361	2.0509

FIGURE LEGENDS

Figure 1. Bland-Altman plot comparing 2 methods of measuring Peak Expiratory Flow, data taken from Bland and Altman's 1986 paper.[2] Error bars represent 95% confidence limits calculated by different methods, as indicated.

Figure 2. Probability density functions for confidence intervals for 95% LoAs (degrees of freedom $\upsilon = 4$, $\bar{d} = 0$ and $s_{diff} = 1$). Shaded tails represent upper and lower 2.5% of the confidence interval. The 1.96 line shows the Bland-Altman LoA. a.) Bland and Altman's approximate method for LoAs considered individually. b.) Exact method for LoAs considered individually. c.) Exact method for LoAs considered as a pair (upper LoA shown).

Figure 3. Bland-Altman analysis for comparison of two tear meniscometry systems (PDM and VM). (Reproduced with permission from Bandlitz et al.[25]). Measurements were made on five different capillary tubes' sections. The figure is as originally published except for the addition of error bars showing the confidence intervals for LoAs considered as a pair.

Figure 4. Bland-Altman analysis for intrasession repeatability of retinal oxygen saturation measurements made on retinal arteries (A) and retinal veins (B), from a recent study (Reproduced with permission from O'Connell et al.[26]) The figure is as originally published except for the addition of error bars showing the confidence intervals for LoAs considered as a pair.

Figure 5. Bland-Altman analyses for repeatability of axial length in 37 children. (Reproduced with permission from Carkeet et al.[12]) (left panel) IOLmaster measurements. (right panel) Echoscan measurements. The figure is as published originally, except that exact 95% confidence intervals for LoAs considered as a pair have been added (error bars). At this scale the IOLmaster confidence limits (indicated by arrow) abut the LoAs.

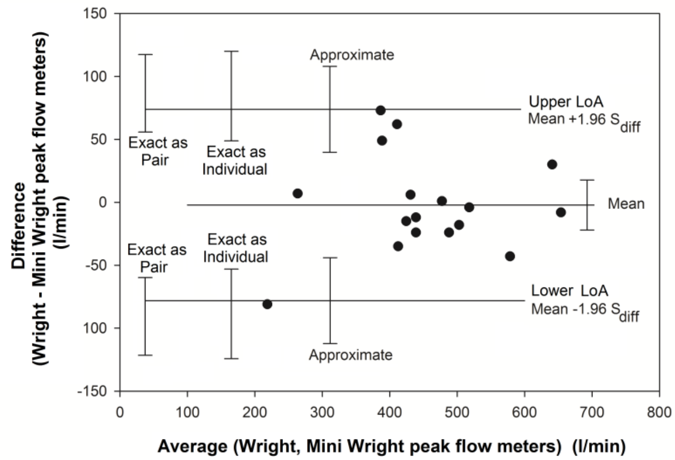


Figure 1.

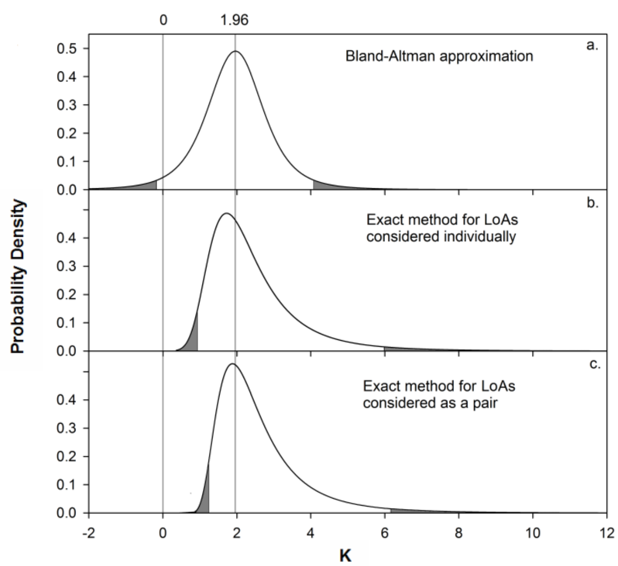


Figure 2

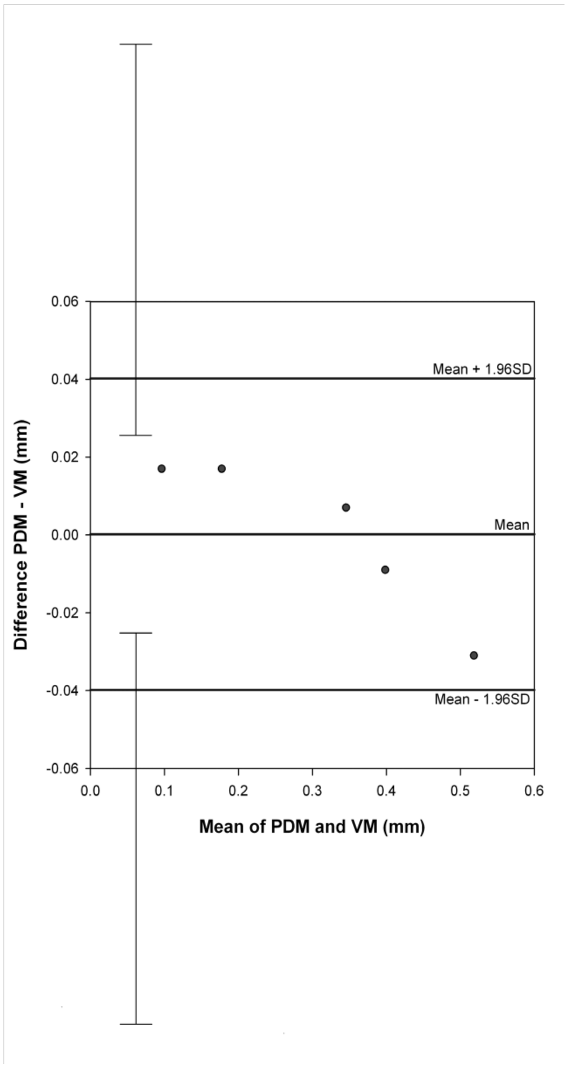


Figure 3

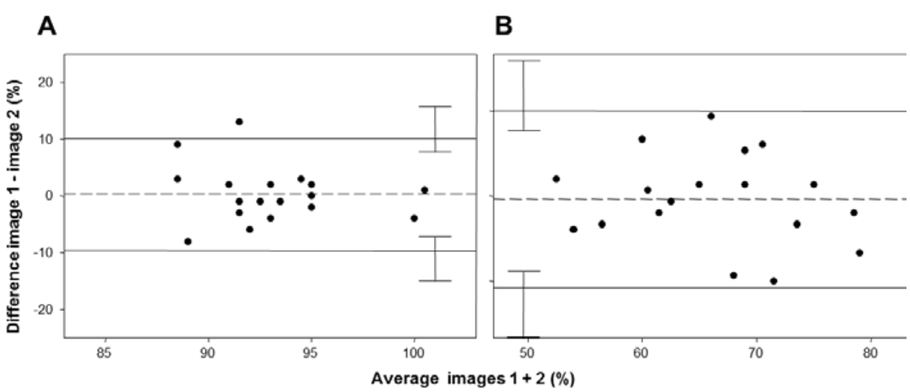
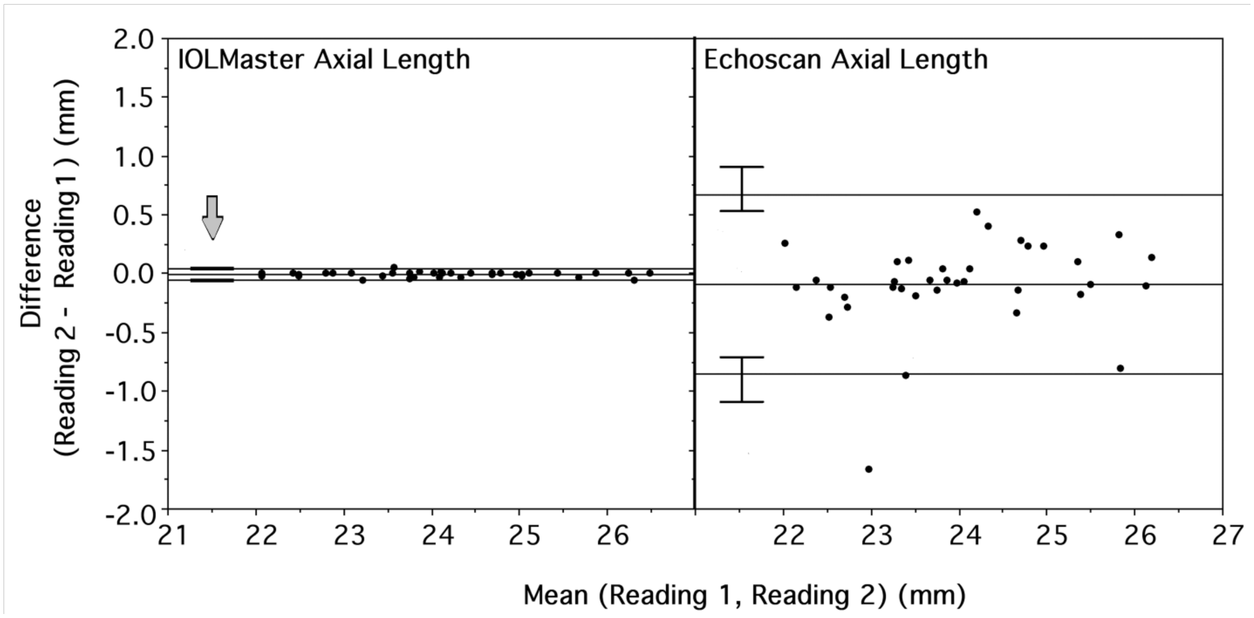


Figure 4



IOLMaster Axial Length
Echoscan Axial Length
Difference
(Reading 2 - Reading1) (mm)
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
21
22
23
24
25
26
27
Mean (Reading 1, Reading 2) (mm)

Figure 5

Coefficients for calculating exact 95% confidence intervals for 95% LoAs considered individually, for different degrees of freedom $\upsilon = n - 1$.

ν	$c_{0.025}$	$c_{0.05}$	$c_{0.50}$	$c_{0.95}$	$c_{0.975}$
1	0.5226	0.7109	2.8197	31.2575	62.5576
2	0.7126	0.8748	2.3205	8.9861	12.8162
3	0.8349	0.9825	2.1862	6.0150	7.7095
4	0.9232	1.0606	2.1244	4.9085	5.9749
5	0.9912	1.1208	2.0891	4.3291	5.1109
6	1.0459	1.1693	2.0662	3.9696	4.5916
7	1.0913	1.2094	2.0502	3.7228	4.2432
8	1.1299	1.2434	2.0384	3.5417	3.9918
9	1.1632	1.2728	2.0293	3.4025	3.8009
10	1.1924	1.2986	2.0221	3.2915	3.6505
11	1.2183	1.3214	2.0162	3.2007	3.5285
12	1.2415	1.3418	2.0114	3.1248	3.4272
13	1.2625	1.3602	2.0073	3.0603	3.3416
14	1.2815	1.3769	2.0038	3.0046	3.2682
15	1.2990	1.3922	2.0008	2.9559	3.2044
16	1.3150	1.4063	1.9982	2.9130	3.1483
17	1.3299	1.4193	1.9959	2.8748	3.0985
18	1.3436	1.4313	1.9939	2.8405	3.0541
19	1.3565	1.4426	1.9921	2.8095	3.0140
20	1.3685	1.4530	1.9904	2.7814	2.9777
21	1.3798	1.4629	1.9889	2.7557	2.9447
22	1.3903	1.4721	1.9876	2.7321	2.9144
23	1.4003	1.4808	1.9864	2.7104	2.8865
24	1.4098	1.4891	1.9853	2.6903	2.8608
25	1.4187	1.4969	1.9842	2.6716	2.8370
26	1.4272	1.5042	1.9833	2.6542	2.8148
27	1.4353	1.5113	1.9824	2.6379	2.7941
28	1.4430	1.5180	1.9816	2.6227	2.7747
29	1.4503	1.5244	1.9808	2.6083	2.7566
30	1.4574	1.5305	1.9801	2.5949	2.7395
31	1.4641	1.5363	1.9795	2.5821	2.7234
32	1.4705	1.5419	1.9789	2.5701	2.7082
33	1.4767	1.5473	1.9783	2.5587	2.6938
34	1.4826	1.5524	1.9777	2.5479	2.6802
35	1.4883	1.5574	1.9772	2.5376	2.6672
36	1.4938	1.5621	1.9767	2.5278	2.6549
37	1.4991	1.5667	1.9763	2.5185	2.6432
38	1.5042	1.5711	1.9758	2.5095	2.6320
39	1.5092	1.5754	1.9754	2.5010	2.6213
40	1.5139	1.5795	1.9750	2.4929	2.6111
41	1.5186	1.5835	1.9747	2.4850	2.6013
42	1.5230	1.5874	1.9743	2.4775	2.5919
43	1.5273	1.5911	1.9740	2.4703	2.5829
44	1.5315	1.5948	1.9737	2.4634	2.5742
45	1.5356	1.5983	1.9734	2.4567	2.5659
46	1.5395	1.6017	1.9731	2.4503	2.5578
47	1.5434	1.6050	1.9728	2.4441	2.5501
48	1.5471	1.6082	1.9725	2.4381	2.5427
49	1.5507	1.6113	1.9723	2.4324	2.5355
50	1.5542	1.6144	1.9720	2.4268	2.5285
51	1.5576	1.6173	1.9718	2.4214	2.5218
52	1.5610	1.6202	1.9715	2.4162	2.5153
53	1.5642	1.6230	1.9713	2.4111	2.5090
54	1.5674	1.6257	1.9711	2.4062	2.5030
55	1.5705	1.6284	1.9709	2.4015	2.4971
56	1.5735	1.6310	1.9707	2.3969	2.4913
57	1.5764	1.6335	1.9705	2.3924	2.4858
58	1.5793	1.6360	1.9703	2.3881	2.4804
59	1.5821	1.6384	1.9702	2.3838	2.4752
60	1.5848	1.6408	1.9700	2.3797	2.4701
61	1.5875	1.6431	1.9698	2.3758	2.4651
62	1.5901	1.6454	1.9697	2.3719	2.4603
63	1.5927	1.6476	1.9695	2.3681	2.4556
64	1.5952	1.6497	1.9694	2.3644	2.4511
65	1.5977	1.6519	1.9692	2.3608	2.4466
66	1.6001	1.6539	1.9691	2.3573	2.4423
67	1.6024	1.6559	1.9689	2.3539	2.4381
68	1.6047	1.6579	1.9688	2.3506	2.4340
69	1.6070	1.6599	1.9687	2.3473	2.4299
70	1.6092	1.6618	1.9685	2.3441	2.4260
71	1.6114	1.6637	1.9684	2.3410	2.4222
72	1.6135	1.6655	1.9683	2.3380	2.4184
73	1.6156	1.6673	1.9682	2.3350	2.4148

Coefficients for CIs. LoAs considered ***individually.***

ν	$c_{0.025}$	$c_{0.05}$	$c_{0.50}$	$c_{0.95}$	$c_{0.975}$
74	1.6177	1.6690	1.9681	2.3322	2.4112
75	1.6197	1.6708	1.9680	2.3293	2.4077
76	1.6216	1.6725	1.9679	2.3265	2.4043
77	1.6236	1.6741	1.9678	2.3238	2.4010
78	1.6255	1.6758	1.9677	2.3212	2.3977
79	1.6274	1.6774	1.9676	2.3186	2.3945
80	1.6292	1.6790	1.9675	2.3160	2.3913
81	1.6310	1.6805	1.9674	2.3135	2.3883
82	1.6328	1.6821	1.9673	2.3111	2.3852
83	1.6345	1.6836	1.9672	2.3087	2.3823
84	1.6363	1.6850	1.9671	2.3063	2.3794
85	1.6379	1.6865	1.9670	2.3040	2.3766
86	1.6396	1.6879	1.9669	2.3018	2.3738
87	1.6413	1.6893	1.9669	2.2996	2.3711
88	1.6429	1.6907	1.9668	2.2974	2.3684
89	1.6444	1.6921	1.9667	2.2952	2.3657
90	1.6460	1.6934	1.9666	2.2931	2.3632
91	1.6475	1.6947	1.9666	2.2911	2.3606
92	1.6491	1.6960	1.9665	2.2890	2.3581
93	1.6506	1.6973	1.9664	2.2871	2.3557
94	1.6520	1.6986	1.9663	2.2851	2.3533
95	1.6535	1.6998	1.9663	2.2832	2.3509
96	1.6549	1.7010	1.9662	2.2813	2.3486
97	1.6563	1.7023	1.9661	2.2794	2.3463
98	1.6577	1.7034	1.9661	2.2776	2.3441
99	1.6591	1.7046	1.9660	2.2758	2.3419
100	1.6604	1.7058	1.9660	2.2740	2.3397
101	1.6617	1.7069	1.9659	2.2723	2.3376
102	1.6631	1.7080	1.9658	2.2706	2.3355
103	1.6643	1.7091	1.9658	2.2689	2.3334
104	1.6656	1.7102	1.9657	2.2672	2.3314
105	1.6669	1.7113	1.9657	2.2656	2.3294
106	1.6681	1.7124	1.9656	2.2640	2.3274
107	1.6693	1.7134	1.9656	2.2624	2.3254
108	1.6706	1.7145	1.9655	2.2609	2.3235
109	1.6718	1.7155	1.9655	2.2593	2.3216
110	1.6729	1.7165	1.9654	2.2578	2.3198
111	1.6741	1.7175	1.9654	2.2563	2.3180
112	1.6752	1.7185	1.9653	2.2548	2.3162
113	1.6764	1.7195	1.9653	2.2534	2.3144
114	1.6775	1.7204	1.9652	2.2520	2.3126
115	1.6786	1.7214	1.9652	2.2505	2.3109
116	1.6797	1.7223	1.9651	2.2492	2.3092
117	1.6808	1.7232	1.9651	2.2478	2.3075
118	1.6819	1.7242	1.9650	2.2464	2.3059
119	1.6829	1.7251	1.9650	2.2451	2.3042
120	1.6840	1.7260	1.9650	2.2438	2.3026
121	1.6850	1.7268	1.9649	2.2425	2.3010
122	1.6860	1.7277	1.9649	2.2412	2.2995
123	1.6870	1.7286	1.9648	2.2399	2.2979
124	1.6880	1.7294	1.9648	2.2387	2.2964
125	1.6890	1.7303	1.9648	2.2374	2.2949
126	1.6900	1.7311	1.9647	2.2362	2.2934
127	1.6909	1.7319	1.9647	2.2350	2.2919
128	1.6919	1.7327	1.9646	2.2338	2.2905
129	1.6928	1.7336	1.9646	2.2327	2.2890
130	1.6938	1.7344	1.9646	2.2315	2.2876
131	1.6947	1.7351	1.9645	2.2304	2.2862
132	1.6956	1.7359	1.9645	2.2292	2.2848
133	1.6965	1.7367	1.9645	2.2281	2.2835
134	1.6974	1.7375	1.9644	2.2270	2.2821
135	1.6983	1.7382	1.9644	2.2259	2.2808
136	1.6992	1.7390	1.9644	2.2249	2.2795
137	1.7000	1.7397	1.9643	2.2238	2.2782
138	1.7009	1.7404	1.9643	2.2227	2.2769
139	1.7017	1.7412	1.9643	2.2217	2.2756
140	1.7026	1.7419	1.9642	2.2207	2.2744
141	1.7034	1.7426	1.9642	2.2197	2.2731
142	1.7042	1.7433	1.9642	2.2187	2.2719
143	1.7050	1.7440	1.9642	2.2177	2.2707
144	1.7058	1.7447	1.9641	2.2167	2.2695
145	1.7066	1.7454	1.9641	2.2157	2.2683
146	1.7074	1.7460	1.9641	2.2147	2.2672
147	1.7082	1.7467	1.9640	2.2138	2.2660
148	1.7090	1.7474	1.9640	2.2129	2.2648
149	1.7098	1.7480	1.9640	2.2119	2.2637
150	1.7105	1.7487	1.9640	2.2110	2.2626
151	1.7113	1.7493	1.9639	2.2101	2.2615
152	1.7120	1.7500	1.9639	2.2092	2.2604
153	1.7128	1.7506	1.9639	2.2083	2.2593

Coefficients for CIs. LoAs considered individually.

ν	$c_{0.025}$	$c_{0.05}$	$c_{0.50}$	$c_{0.95}$	$c_{0.975}$
154	1.7135	1.7512	1.9639	2.2074	2.2582
155	1.7142	1.7518	1.9638	2.2065	2.2572
156	1.7150	1.7525	1.9638	2.2057	2.2561
157	1.7157	1.7531	1.9638	2.2048	2.2551
158	1.7164	1.7537	1.9638	2.2040	2.2540
159	1.7171	1.7543	1.9637	2.2031	2.2530
160	1.7178	1.7549	1.9637	2.2023	2.2520
161	1.7185	1.7555	1.9637	2.2015	2.2510
162	1.7191	1.7560	1.9637	2.2007	2.2500
163	1.7198	1.7566	1.9636	2.1999	2.2490
164	1.7205	1.7572	1.9636	2.1991	2.2480
165	1.7212	1.7578	1.9636	2.1983	2.2471
166	1.7218	1.7583	1.9636	2.1975	2.2461
167	1.7225	1.7589	1.9635	2.1967	2.2452
168	1.7231	1.7594	1.9635	2.1960	2.2442
169	1.7238	1.7600	1.9635	2.1952	2.2433
170	1.7244	1.7605	1.9635	2.1944	2.2424
171	1.7250	1.7611	1.9635	2.1937	2.2415
172	1.7257	1.7616	1.9634	2.1930	2.2406
173	1.7263	1.7621	1.9634	2.1922	2.2397
174	1.7269	1.7627	1.9634	2.1915	2.2388
175	1.7275	1.7632	1.9634	2.1908	2.2379
176	1.7281	1.7637	1.9634	2.1901	2.2371
177	1.7287	1.7642	1.9633	2.1894	2.2362
178	1.7293	1.7647	1.9633	2.1887	2.2354
179	1.7299	1.7652	1.9633	2.1880	2.2345
180	1.7305	1.7657	1.9633	2.1873	2.2337
181	1.7311	1.7662	1.9633	2.1866	2.2329
182	1.7317	1.7667	1.9633	2.1859	2.2320
183	1.7322	1.7672	1.9632	2.1853	2.2312
184	1.7328	1.7677	1.9632	2.1846	2.2304
185	1.7334	1.7682	1.9632	2.1839	2.2296
186	1.7339	1.7687	1.9632	2.1833	2.2288
187	1.7345	1.7691	1.9632	2.1826	2.2280
188	1.7350	1.7696	1.9631	2.1820	2.2272
189	1.7356	1.7701	1.9631	2.1813	2.2265
190	1.7361	1.7705	1.9631	2.1807	2.2257
191	1.7367	1.7710	1.9631	2.1801	2.2249
192	1.7372	1.7715	1.9631	2.1795	2.2242
193	1.7377	1.7719	1.9631	2.1789	2.2234
194	1.7383	1.7724	1.9630	2.1782	2.2227
195	1.7388	1.7728	1.9630	2.1776	2.2220
196	1.7393	1.7733	1.9630	2.1770	2.2212
197	1.7398	1.7737	1.9630	2.1764	2.2205
198	1.7403	1.7741	1.9630	2.1758	2.2198
199	1.7409	1.7746	1.9630	2.1753	2.2191
200	1.7414	1.7750	1.9630	2.1747	2.2184
201	1.7419	1.7754	1.9629	2.1741	2.2177
202	1.7424	1.7759	1.9629	2.1735	2.2170
203	1.7429	1.7763	1.9629	2.1730	2.2163
204	1.7434	1.7767	1.9629	2.1724	2.2156
205	1.7438	1.7771	1.9629	2.1718	2.2149
206	1.7443	1.7775	1.9629	2.1713	2.2142
207	1.7448	1.7779	1.9629	2.1707	2.2136
208	1.7453	1.7784	1.9628	2.1702	2.2129
209	1.7458	1.7788	1.9628	2.1696	2.2122
210	1.7462	1.7792	1.9628	2.1691	2.2116
211	1.7467	1.7796	1.9628	2.1686	2.2109
212	1.7472	1.7800	1.9628	2.1680	2.2103
213	1.7476	1.7804	1.9628	2.1675	2.2096
214	1.7481	1.7807	1.9628	2.1670	2.2090
215	1.7485	1.7811	1.9627	2.1665	2.2084
216	1.7490	1.7815	1.9627	2.1660	2.2078
217	1.7495	1.7819	1.9627	2.1654	2.2071
218	1.7499	1.7823	1.9627	2.1649	2.2065
219	1.7503	1.7827	1.9627	2.1644	2.2059
220	1.7508	1.7830	1.9627	2.1639	2.2053
221	1.7512	1.7834	1.9627	2.1634	2.2047
222	1.7517	1.7838	1.9627	2.1629	2.2041
223	1.7521	1.7842	1.9626	2.1624	2.2035
224	1.7525	1.7845	1.9626	2.1620	2.2029
225	1.7530	1.7849	1.9626	2.1615	2.2023
226	1.7534	1.7852	1.9626	2.1610	2.2017
227	1.7538	1.7856	1.9626	2.1605	2.2012
228	1.7542	1.7860	1.9626	2.1600	2.2006
229	1.7546	1.7863	1.9626	2.1596	2.2000
230	1.7550	1.7867	1.9626	2.1591	2.1994
231	1.7555	1.7870	1.9626	2.1586	2.1989
232	1.7559	1.7874	1.9625	2.1582	2.1983
233	1.7563	1.7877	1.9625	2.1577	2.1978

Coefficients for CIs. LoAs considered <u>individually.</u>

ν	$c_{0.025}$	$c_{0.05}$	$c_{0.50}$	$c_{0.95}$	$c_{0.975}$
234	1.7567	1.7881	1.9625	2.1573	2.1972
235	1.7571	1.7884	1.9625	2.1568	2.1967
236	1.7575	1.7887	1.9625	2.1564	2.1961
237	1.7579	1.7891	1.9625	2.1559	2.1956
238	1.7583	1.7894	1.9625	2.1555	2.1951
239	1.7587	1.7898	1.9625	2.1550	2.1945
240	1.7591	1.7901	1.9625	2.1546	2.1940
241	1.7594	1.7904	1.9624	2.1542	2.1935
242	1.7598	1.7907	1.9624	2.1537	2.1929
243	1.7602	1.7911	1.9624	2.1533	2.1924
244	1.7606	1.7914	1.9624	2.1529	2.1919
245	1.7610	1.7917	1.9624	2.1525	2.1914
246	1.7614	1.7920	1.9624	2.1521	2.1909
247	1.7617	1.7924	1.9624	2.1516	2.1904
248	1.7621	1.7927	1.9624	2.1512	2.1899
249	1.7625	1.7930	1.9624	2.1508	2.1894
250	1.7628	1.7933	1.9624	2.1504	2.1889
251	1.7632	1.7936	1.9623	2.1500	2.1884
252	1.7636	1.7939	1.9623	2.1496	2.1879
253	1.7639	1.7942	1.9623	2.1492	2.1874
254	1.7643	1.7945	1.9623	2.1488	2.1869
255	1.7646	1.7948	1.9623	2.1484	2.1864
256	1.7650	1.7951	1.9623	2.1480	2.1860
257	1.7654	1.7955	1.9623	2.1476	2.1855
258	1.7657	1.7957	1.9623	2.1472	2.1850
259	1.7661	1.7960	1.9623	2.1468	2.1845
260	1.7664	1.7963	1.9623	2.1464	2.1841
261	1.7667	1.7966	1.9623	2.1461	2.1836
262	1.7671	1.7969	1.9622	2.1457	2.1832
263	1.7674	1.7972	1.9622	2.1453	2.1827
264	1.7678	1.7975	1.9622	2.1449	2.1822
265	1.7681	1.7978	1.9622	2.1446	2.1818
266	1.7684	1.7981	1.9622	2.1442	2.1813
267	1.7688	1.7984	1.9622	2.1438	2.1809
268	1.7691	1.7987	1.9622	2.1434	2.1805
269	1.7694	1.7989	1.9622	2.1431	2.1800
270	1.7698	1.7992	1.9622	2.1427	2.1796
271	1.7701	1.7995	1.9622	2.1424	2.1791
272	1.7704	1.7998	1.9622	2.1420	2.1787
273	1.7708	1.8000	1.9622	2.1416	2.1783
274	1.7711	1.8003	1.9621	2.1413	2.1778
275	1.7714	1.8006	1.9621	2.1409	2.1774
276	1.7717	1.8009	1.9621	2.1406	2.1770
277	1.7720	1.8011	1.9621	2.1402	2.1766
278	1.7724	1.8014	1.9621	2.1399	2.1761
279	1.7727	1.8017	1.9621	2.1396	2.1757
280	1.7730	1.8019	1.9621	2.1392	2.1753
281	1.7733	1.8022	1.9621	2.1389	2.1749
282	1.7736	1.8025	1.9621	2.1385	2.1745
283	1.7739	1.8027	1.9621	2.1382	2.1741
284	1.7742	1.8030	1.9621	2.1379	2.1737
285	1.7745	1.8033	1.9621	2.1375	2.1733
286	1.7748	1.8035	1.9621	2.1372	2.1729
287	1.7751	1.8038	1.9620	2.1369	2.1725
288	1.7754	1.8040	1.9620	2.1365	2.1721
289	1.7757	1.8043	1.9620	2.1362	2.1717
290	1.7760	1.8045	1.9620	2.1359	2.1713
291	1.7763	1.8048	1.9620	2.1356	2.1709
292	1.7766	1.8050	1.9620	2.1352	2.1705
293	1.7769	1.8053	1.9620	2.1349	2.1701
294	1.7772	1.8055	1.9620	2.1346	2.1697
295	1.7775	1.8058	1.9620	2.1343	2.1694
296	1.7778	1.8060	1.9620	2.1340	2.1690
297	1.7781	1.8063	1.9620	2.1337	2.1686
298	1.7783	1.8065	1.9620	2.1334	2.1682
299	1.7786	1.8067	1.9620	2.1330	2.1678
300	1.7789	1.8070	1.9620	2.1327	2.1675
301	1.7792	1.8072	1.9620	2.1324	2.1671
302	1.7795	1.8075	1.9619	2.1321	2.1667
303	1.7798	1.8077	1.9619	2.1318	2.1664
304	1.7800	1.8079	1.9619	2.1315	2.1660
305	1.7803	1.8082	1.9619	2.1312	2.1656
306	1.7806	1.8084	1.9619	2.1309	2.1653
307	1.7809	1.8086	1.9619	2.1306	2.1649
308	1.7811	1.8089	1.9619	2.1303	2.1646
309	1.7814	1.8091	1.9619	2.1300	2.1642
310	1.7817	1.8093	1.9619	2.1298	2.1639
311	1.7819	1.8096	1.9619	2.1295	2.1635
312	1.7822	1.8098	1.9619	2.1292	2.1632
313	1.7825	1.8100	1.9619	2.1289	2.1628

Coefficients for CIs. LoAs considered individually.

ν	$c_{0.025}$	$c_{0.05}$	$c_{0.50}$	$c_{0.95}$	$c_{0.975}$
314	1.7827	1.8102	1.9619	2.1286	2.1625
315	1.7830	1.8105	1.9619	2.1283	2.1621
316	1.7833	1.8107	1.9619	2.1280	2.1618
317	1.7835	1.8109	1.9619	2.1277	2.1614
318	1.7838	1.8111	1.9618	2.1275	2.1611
319	1.7840	1.8114	1.9618	2.1272	2.1608
320	1.7843	1.8116	1.9618	2.1269	2.1604
321	1.7846	1.8118	1.9618	2.1266	2.1601
322	1.7848	1.8120	1.9618	2.1264	2.1598
323	1.7851	1.8122	1.9618	2.1261	2.1594
324	1.7853	1.8124	1.9618	2.1258	2.1591
325	1.7856	1.8127	1.9618	2.1255	2.1588
326	1.7858	1.8129	1.9618	2.1253	2.1584
327	1.7861	1.8131	1.9618	2.1250	2.1581
328	1.7863	1.8133	1.9618	2.1247	2.1578
329	1.7866	1.8135	1.9618	2.1245	2.1575
330	1.7868	1.8137	1.9618	2.1242	2.1571
331	1.7871	1.8139	1.9618	2.1239	2.1568
332	1.7873	1.8141	1.9618	2.1237	2.1565
333	1.7876	1.8143	1.9618	2.1234	2.1562
334	1.7878	1.8145	1.9618	2.1232	2.1559
335	1.7880	1.8148	1.9617	2.1229	2.1556
336	1.7883	1.8150	1.9617	2.1226	2.1553
337	1.7885	1.8152	1.9617	2.1224	2.1549
338	1.7888	1.8154	1.9617	2.1221	2.1546
339	1.7890	1.8156	1.9617	2.1219	2.1543
340	1.7892	1.8158	1.9617	2.1216	2.1540
341	1.7895	1.8160	1.9617	2.1214	2.1537
342	1.7897	1.8162	1.9617	2.1211	2.1534
343	1.7899	1.8164	1.9617	2.1209	2.1531
344	1.7902	1.8166	1.9617	2.1206	2.1528
345	1.7904	1.8168	1.9617	2.1204	2.1525
346	1.7906	1.8170	1.9617	2.1201	2.1522
347	1.7909	1.8171	1.9617	2.1199	2.1519
348	1.7911	1.8173	1.9617	2.1196	2.1516
349	1.7913	1.8175	1.9617	2.1194	2.1513
350	1.7915	1.8177	1.9617	2.1192	2.1510
351	1.7918	1.8179	1.9617	2.1189	2.1508
352	1.7920	1.8181	1.9617	2.1187	2.1505
353	1.7922	1.8183	1.9617	2.1184	2.1502
354	1.7924	1.8185	1.9617	2.1182	2.1499
355	1.7927	1.8187	1.9616	2.1180	2.1496
356	1.7929	1.8189	1.9616	2.1177	2.1493
357	1.7931	1.8191	1.9616	2.1175	2.1490
358	1.7933	1.8192	1.9616	2.1173	2.1488
359	1.7935	1.8194	1.9616	2.1170	2.1485
360	1.7938	1.8196	1.9616	2.1168	2.1482
361	1.7940	1.8198	1.9616	2.1166	2.1479
362	1.7942	1.8200	1.9616	2.1163	2.1476
363	1.7944	1.8202	1.9616	2.1161	2.1474
364	1.7946	1.8203	1.9616	2.1159	2.1471
365	1.7948	1.8205	1.9616	2.1157	2.1468
366	1.7951	1.8207	1.9616	2.1154	2.1465
367	1.7953	1.8209	1.9616	2.1152	2.1463
368	1.7955	1.8211	1.9616	2.1150	2.1460
369	1.7957	1.8212	1.9616	2.1148	2.1457
370	1.7959	1.8214	1.9616	2.1145	2.1455
371	1.7961	1.8216	1.9616	2.1143	2.1452
372	1.7963	1.8218	1.9616	2.1141	2.1449
373	1.7965	1.8220	1.9616	2.1139	2.1447
374	1.7967	1.8221	1.9616	2.1137	2.1444
375	1.7969	1.8223	1.9616	2.1135	2.1441
376	1.7971	1.8225	1.9616	2.1132	2.1439
377	1.7973	1.8226	1.9616	2.1130	2.1436
378	1.7975	1.8228	1.9615	2.1128	2.1434
379	1.7977	1.8230	1.9615	2.1126	2.1431
380	1.7979	1.8232	1.9615	2.1124	2.1429
381	1.7981	1.8233	1.9615	2.1122	2.1426
382	1.7983	1.8235	1.9615	2.1120	2.1423
383	1.7985	1.8237	1.9615	2.1118	2.1421
384	1.7987	1.8238	1.9615	2.1115	2.1418
385	1.7989	1.8240	1.9615	2.1113	2.1416
386	1.7991	1.8242	1.9615	2.1111	2.1413
387	1.7993	1.8243	1.9615	2.1109	2.1411
388	1.7995	1.8245	1.9615	2.1107	2.1408
389	1.7997	1.8247	1.9615	2.1105	2.1406
390	1.7999	1.8248	1.9615	2.1103	2.1403
391	1.8001	1.8250	1.9615	2.1101	2.1401
392	1.8003	1.8252	1.9615	2.1099	2.1399
393	1.8005	1.8253	1.9615	2.1097	2.1396

Coefficients for CIs. LoAs considered <u>individually.</u>

ν	$c_{0.025}$	$c_{0.05}$	$c_{0.50}$	$c_{0.95}$	$c_{0.975}$
394	1.8007	1.8255	1.9615	2.1095	2.1394
395	1.8009	1.8257	1.9615	2.1093	2.1391
396	1.8011	1.8258	1.9615	2.1091	2.1389
397	1.8013	1.8260	1.9615	2.1089	2.1386
398	1.8014	1.8261	1.9615	2.1087	2.1384
399	1.8016	1.8263	1.9615	2.1085	2.1382
400	1.8018	1.8265	1.9615	2.1083	2.1379
401	1.8020	1.8266	1.9615	2.1081	2.1377
402	1.8022	1.8268	1.9615	2.1079	2.1375
403	1.8024	1.8269	1.9614	2.1077	2.1372
404	1.8026	1.8271	1.9614	2.1075	2.1370
405	1.8027	1.8272	1.9614	2.1073	2.1368
406	1.8029	1.8274	1.9614	2.1071	2.1365
407	1.8031	1.8275	1.9614	2.1070	2.1363
408	1.8033	1.8277	1.9614	2.1068	2.1361
409	1.8035	1.8279	1.9614	2.1066	2.1358
410	1.8036	1.8280	1.9614	2.1064	2.1356
411	1.8038	1.8282	1.9614	2.1062	2.1354
412	1.8040	1.8283	1.9614	2.1060	2.1352
413	1.8042	1.8285	1.9614	2.1058	2.1349
414	1.8044	1.8286	1.9614	2.1056	2.1347
415	1.8045	1.8288	1.9614	2.1055	2.1345
416	1.8047	1.8289	1.9614	2.1053	2.1343
417	1.8049	1.8291	1.9614	2.1051	2.1340
418	1.8051	1.8292	1.9614	2.1049	2.1338
419	1.8052	1.8294	1.9614	2.1047	2.1336
420	1.8054	1.8295	1.9614	2.1045	2.1334
421	1.8056	1.8297	1.9614	2.1044	2.1332
422	1.8058	1.8298	1.9614	2.1042	2.1329
423	1.8059	1.8300	1.9614	2.1040	2.1327
424	1.8061	1.8301	1.9614	2.1038	2.1325
425	1.8063	1.8302	1.9614	2.1036	2.1323
426	1.8065	1.8304	1.9614	2.1035	2.1321
427	1.8066	1.8305	1.9614	2.1033	2.1319
428	1.8068	1.8307	1.9614	2.1031	2.1317
429	1.8070	1.8308	1.9614	2.1029	2.1314
430	1.8071	1.8310	1.9614	2.1028	2.1312
431	1.8073	1.8311	1.9614	2.1026	2.1310
432	1.8075	1.8312	1.9613	2.1024	2.1308
433	1.8076	1.8314	1.9613	2.1022	2.1306
434	1.8078	1.8315	1.9613	2.1021	2.1304
435	1.8080	1.8317	1.9613	2.1019	2.1302
436	1.8081	1.8318	1.9613	2.1017	2.1300
437	1.8083	1.8320	1.9613	2.1016	2.1298
438	1.8085	1.8321	1.9613	2.1014	2.1296
439	1.8086	1.8322	1.9613	2.1012	2.1294
440	1.8088	1.8324	1.9613	2.1010	2.1292
441	1.8089	1.8325	1.9613	2.1009	2.1290
442	1.8091	1.8326	1.9613	2.1007	2.1288
443	1.8093	1.8328	1.9613	2.1005	2.1286
444	1.8094	1.8329	1.9613	2.1004	2.1283
445	1.8096	1.8331	1.9613	2.1002	2.1281
446	1.8097	1.8332	1.9613	2.1000	2.1279
447	1.8099	1.8333	1.9613	2.0999	2.1277
448	1.8101	1.8335	1.9613	2.0997	2.1276
449	1.8102	1.8336	1.9613	2.0995	2.1274
450	1.8104	1.8337	1.9613	2.0994	2.1272
451	1.8105	1.8339	1.9613	2.0992	2.1270
452	1.8107	1.8340	1.9613	2.0991	2.1268
453	1.8109	1.8341	1.9613	2.0989	2.1266
454	1.8110	1.8343	1.9613	2.0987	2.1264
455	1.8112	1.8344	1.9613	2.0986	2.1262
456	1.8113	1.8345	1.9613	2.0984	2.1260
457	1.8115	1.8347	1.9613	2.0983	2.1258
458	1.8116	1.8348	1.9613	2.0981	2.1256
459	1.8118	1.8349	1.9613	2.0979	2.1254
460	1.8119	1.8350	1.9613	2.0978	2.1252
461	1.8121	1.8352	1.9613	2.0976	2.1250
462	1.8122	1.8353	1.9613	2.0975	2.1248
463	1.8124	1.8354	1.9613	2.0973	2.1247
464	1.8125	1.8356	1.9613	2.0972	2.1245
465	1.8127	1.8357	1.9612	2.0970	2.1243
466	1.8128	1.8358	1.9612	2.0968	2.1241
467	1.8130	1.8359	1.9612	2.0967	2.1239
468	1.8131	1.8361	1.9612	2.0965	2.1237
469	1.8133	1.8362	1.9612	2.0964	2.1235
470	1.8134	1.8363	1.9612	2.0962	2.1234
471	1.8136	1.8364	1.9612	2.0961	2.1232
472	1.8137	1.8366	1.9612	2.0959	2.1230
473	1.8139	1.8367	1.9612	2.0958	2.1228

Coefficients for CIs. LoAs considered <u>individually.</u>

ν	$c_{0.025}$	$c_{0.05}$	$c_{0.50}$	$c_{0.95}$	$c_{0.975}$
474	1.8140	1.8368	1.9612	2.0956	2.1226
475	1.8142	1.8369	1.9612	2.0955	2.1224
476	1.8143	1.8371	1.9612	2.0953	2.1223
477	1.8145	1.8372	1.9612	2.0952	2.1221
478	1.8146	1.8373	1.9612	2.0950	2.1219
479	1.8147	1.8374	1.9612	2.0949	2.1217
480	1.8149	1.8376	1.9612	2.0947	2.1215
481	1.8150	1.8377	1.9612	2.0946	2.1214
482	1.8152	1.8378	1.9612	2.0944	2.1212
483	1.8153	1.8379	1.9612	2.0943	2.1210
484	1.8155	1.8380	1.9612	2.0941	2.1208
485	1.8156	1.8382	1.9612	2.0940	2.1207
486	1.8157	1.8383	1.9612	2.0939	2.1205
487	1.8159	1.8384	1.9612	2.0937	2.1203
488	1.8160	1.8385	1.9612	2.0936	2.1201
489	1.8162	1.8386	1.9612	2.0934	2.1200
490	1.8163	1.8387	1.9612	2.0933	2.1198
491	1.8164	1.8389	1.9612	2.0931	2.1196
492	1.8166	1.8390	1.9612	2.0930	2.1195
493	1.8167	1.8391	1.9612	2.0929	2.1193
494	1.8169	1.8392	1.9612	2.0927	2.1191
495	1.8170	1.8393	1.9612	2.0926	2.1189
496	1.8171	1.8395	1.9612	2.0924	2.1188
497	1.8173	1.8396	1.9612	2.0923	2.1186
498	1.8174	1.8397	1.9612	2.0922	2.1184
499	1.8175	1.8398	1.9612	2.0920	2.1183
500	1.8177	1.8399	1.9612	2.0919	2.1181
501	1.8178	1.8400	1.9612	2.0917	2.1179
502	1.8179	1.8401	1.9612	2.0916	2.1178
503	1.8181	1.8403	1.9612	2.0915	2.1176
504	1.8182	1.8404	1.9612	2.0913	2.1174
505	1.8183	1.8405	1.9611	2.0912	2.1173
506	1.8185	1.8406	1.9611	2.0911	2.1171
507	1.8186	1.8407	1.9611	2.0909	2.1169
508	1.8187	1.8408	1.9611	2.0908	2.1168
509	1.8189	1.8409	1.9611	2.0906	2.1166
510	1.8190	1.8410	1.9611	2.0905	2.1165
511	1.8191	1.8412	1.9611	2.0904	2.1163
512	1.8193	1.8413	1.9611	2.0902	2.1161
513	1.8194	1.8414	1.9611	2.0901	2.1160
514	1.8195	1.8415	1.9611	2.0900	2.1158
515	1.8197	1.8416	1.9611	2.0898	2.1157
516	1.8198	1.8417	1.9611	2.0897	2.1155
517	1.8199	1.8418	1.9611	2.0896	2.1153
518	1.8200	1.8419	1.9611	2.0895	2.1152
519	1.8202	1.8420	1.9611	2.0893	2.1150
520	1.8203	1.8421	1.9611	2.0892	2.1149
521	1.8204	1.8422	1.9611	2.0891	2.1147
522	1.8206	1.8424	1.9611	2.0889	2.1145
523	1.8207	1.8425	1.9611	2.0888	2.1144
524	1.8208	1.8426	1.9611	2.0887	2.1142
525	1.8209	1.8427	1.9611	2.0885	2.1141
526	1.8211	1.8428	1.9611	2.0884	2.1139
527	1.8212	1.8429	1.9611	2.0883	2.1138
528	1.8213	1.8430	1.9611	2.0882	2.1136
529	1.8214	1.8431	1.9611	2.0880	2.1135
530	1.8216	1.8432	1.9611	2.0879	2.1133
531	1.8217	1.8433	1.9611	2.0878	2.1132
532	1.8218	1.8434	1.9611	2.0877	2.1130
533	1.8219	1.8435	1.9611	2.0875	2.1129
534	1.8221	1.8436	1.9611	2.0874	2.1127
535	1.8222	1.8437	1.9611	2.0873	2.1126
536	1.8223	1.8438	1.9611	2.0872	2.1124
537	1.8224	1.8439	1.9611	2.0870	2.1123
538	1.8225	1.8440	1.9611	2.0869	2.1121
539	1.8227	1.8441	1.9611	2.0868	2.1120
540	1.8228	1.8442	1.9611	2.0867	2.1118
541	1.8229	1.8443	1.9611	2.0865	2.1117
542	1.8230	1.8445	1.9611	2.0864	2.1115
543	1.8231	1.8446	1.9611	2.0863	2.1114
544	1.8233	1.8447	1.9611	2.0862	2.1112
545	1.8234	1.8448	1.9611	2.0861	2.1111
546	1.8235	1.8449	1.9611	2.0859	2.1109
547	1.8236	1.8450	1.9611	2.0858	2.1108
548	1.8237	1.8451	1.9611	2.0857	2.1106
549	1.8239	1.8452	1.9611	2.0856	2.1105
550	1.8240	1.8453	1.9611	2.0855	2.1104
551	1.8241	1.8454	1.9610	2.0853	2.1102
552	1.8242	1.8455	1.9610	2.0852	2.1101
553	1.8243	1.8456	1.9610	2.0851	2.1099

Coefficients for CIs. LoAs considered individually.

ν	$c_{0.025}$	$c_{0.05}$	$c_{0.50}$	$c_{0.95}$	$c_{0.975}$
554	1.8244	1.8457	1.9610	2.0850	2.1098
555	1.8246	1.8458	1.9610	2.0849	2.1096
556	1.8247	1.8459	1.9610	2.0847	2.1095
557	1.8248	1.8459	1.9610	2.0846	2.1094
558	1.8249	1.8460	1.9610	2.0845	2.1092
559	1.8250	1.8461	1.9610	2.0844	2.1091
560	1.8251	1.8462	1.9610	2.0843	2.1089
561	1.8253	1.8463	1.9610	2.0842	2.1088
562	1.8254	1.8464	1.9610	2.0840	2.1087
563	1.8255	1.8465	1.9610	2.0839	2.1085
564	1.8256	1.8466	1.9610	2.0838	2.1084
565	1.8257	1.8467	1.9610	2.0837	2.1082
566	1.8258	1.8468	1.9610	2.0836	2.1081
567	1.8259	1.8469	1.9610	2.0835	2.1080
568	1.8260	1.8470	1.9610	2.0834	2.1078
569	1.8262	1.8471	1.9610	2.0832	2.1077
570	1.8263	1.8472	1.9610	2.0831	2.1076
571	1.8264	1.8473	1.9610	2.0830	2.1074
572	1.8265	1.8474	1.9610	2.0829	2.1073
573	1.8266	1.8475	1.9610	2.0828	2.1071
574	1.8267	1.8476	1.9610	2.0827	2.1070
575	1.8268	1.8477	1.9610	2.0826	2.1069
576	1.8269	1.8478	1.9610	2.0825	2.1067
577	1.8270	1.8479	1.9610	2.0823	2.1066
578	1.8272	1.8480	1.9610	2.0822	2.1065
579	1.8273	1.8480	1.9610	2.0821	2.1063
580	1.8274	1.8481	1.9610	2.0820	2.1062
581	1.8275	1.8482	1.9610	2.0819	2.1061
582	1.8276	1.8483	1.9610	2.0818	2.1059
583	1.8277	1.8484	1.9610	2.0817	2.1058
584	1.8278	1.8485	1.9610	2.0816	2.1057
585	1.8279	1.8486	1.9610	2.0815	2.1055
586	1.8280	1.8487	1.9610	2.0814	2.1054
587	1.8281	1.8488	1.9610	2.0812	2.1053
588	1.8282	1.8489	1.9610	2.0811	2.1052
589	1.8283	1.8490	1.9610	2.0810	2.1050
590	1.8285	1.8490	1.9610	2.0809	2.1049
591	1.8286	1.8491	1.9610	2.0808	2.1048
592	1.8287	1.8492	1.9610	2.0807	2.1046
593	1.8288	1.8493	1.9610	2.0806	2.1045
594	1.8289	1.8494	1.9610	2.0805	2.1044
595	1.8290	1.8495	1.9610	2.0804	2.1043
596	1.8291	1.8496	1.9610	2.0803	2.1041
597	1.8292	1.8497	1.9610	2.0802	2.1040
598	1.8293	1.8498	1.9610	2.0801	2.1039
599	1.8294	1.8499	1.9610	2.0800	2.1038
600	1.8295	1.8499	1.9610	2.0799	2.1036
601	1.8296	1.8500	1.9610	2.0798	2.1035
602	1.8297	1.8501	1.9610	2.0797	2.1034
603	1.8298	1.8502	1.9610	2.0796	2.1032
604	1.8299	1.8503	1.9610	2.0795	2.1031
605	1.8300	1.8504	1.9610	2.0794	2.1030
606	1.8301	1.8505	1.9610	2.0792	2.1029
607	1.8302	1.8505	1.9609	2.0791	2.1028
608	1.8303	1.8506	1.9609	2.0790	2.1026
609	1.8304	1.8507	1.9609	2.0789	2.1025
610	1.8305	1.8508	1.9609	2.0788	2.1024
611	1.8306	1.8509	1.9609	2.0787	2.1023
612	1.8307	1.8510	1.9609	2.0786	2.1021
613	1.8308	1.8511	1.9609	2.0785	2.1020
614	1.8309	1.8511	1.9609	2.0784	2.1019
615	1.8310	1.8512	1.9609	2.0783	2.1018
616	1.8311	1.8513	1.9609	2.0782	2.1017
617	1.8312	1.8514	1.9609	2.0781	2.1015
618	1.8313	1.8515	1.9609	2.0780	2.1014
619	1.8314	1.8516	1.9609	2.0779	2.1013
620	1.8315	1.8517	1.9609	2.0778	2.1012
621	1.8316	1.8517	1.9609	2.0777	2.1011
622	1.8317	1.8518	1.9609	2.0776	2.1009
623	1.8318	1.8519	1.9609	2.0775	2.1008
624	1.8319	1.8520	1.9609	2.0774	2.1007
625	1.8320	1.8521	1.9609	2.0773	2.1006
626	1.8321	1.8522	1.9609	2.0772	2.1005
627	1.8322	1.8522	1.9609	2.0771	2.1003
628	1.8323	1.8523	1.9609	2.0770	2.1002
629	1.8324	1.8524	1.9609	2.0770	2.1001
630	1.8325	1.8525	1.9609	2.0769	2.1000
631	1.8326	1.8526	1.9609	2.0768	2.0999
632	1.8327	1.8526	1.9609	2.0767	2.0998
633	1.8328	1.8527	1.9609	2.0766	2.0996

Coefficients for CIs. LoAs considered ***individually.***

ν	$c_{0.025}$	$c_{0.05}$	$c_{0.50}$	$c_{0.95}$	$c_{0.975}$
634	1.8329	1.8528	1.9609	2.0765	2.0995
635	1.8330	1.8529	1.9609	2.0764	2.0994
636	1.8331	1.8530	1.9609	2.0763	2.0993
637	1.8332	1.8531	1.9609	2.0762	2.0992
638	1.8333	1.8531	1.9609	2.0761	2.0991
639	1.8334	1.8532	1.9609	2.0760	2.0990
640	1.8335	1.8533	1.9609	2.0759	2.0988
641	1.8336	1.8534	1.9609	2.0758	2.0987
642	1.8336	1.8535	1.9609	2.0757	2.0986
643	1.8337	1.8535	1.9609	2.0756	2.0985
644	1.8338	1.8536	1.9609	2.0755	2.0984
645	1.8339	1.8537	1.9609	2.0754	2.0983
646	1.8340	1.8538	1.9609	2.0753	2.0982
647	1.8341	1.8538	1.9609	2.0752	2.0980
648	1.8342	1.8539	1.9609	2.0751	2.0979
649	1.8343	1.8540	1.9609	2.0751	2.0978
650	1.8344	1.8541	1.9609	2.0750	2.0977
651	1.8345	1.8542	1.9609	2.0749	2.0976
652	1.8346	1.8542	1.9609	2.0748	2.0975
653	1.8347	1.8543	1.9609	2.0747	2.0974
654	1.8348	1.8544	1.9609	2.0746	2.0973
655	1.8349	1.8545	1.9609	2.0745	2.0972
656	1.8349	1.8545	1.9609	2.0744	2.0971
657	1.8350	1.8546	1.9609	2.0743	2.0969
658	1.8351	1.8547	1.9609	2.0742	2.0968
659	1.8352	1.8548	1.9609	2.0741	2.0967
660	1.8353	1.8549	1.9609	2.0741	2.0966
661	1.8354	1.8549	1.9609	2.0740	2.0965
662	1.8355	1.8550	1.9609	2.0739	2.0964
663	1.8356	1.8551	1.9609	2.0738	2.0963
664	1.8357	1.8552	1.9609	2.0737	2.0962
665	1.8358	1.8552	1.9609	2.0736	2.0961
666	1.8358	1.8553	1.9609	2.0735	2.0960
667	1.8359	1.8554	1.9609	2.0734	2.0959
668	1.8360	1.8555	1.9609	2.0733	2.0958
669	1.8361	1.8555	1.9609	2.0732	2.0957
670	1.8362	1.8556	1.9609	2.0732	2.0955
671	1.8363	1.8557	1.9609	2.0731	2.0954
672	1.8364	1.8558	1.9609	2.0730	2.0953
673	1.8365	1.8558	1.9609	2.0729	2.0952
674	1.8366	1.8559	1.9609	2.0728	2.0951
675	1.8366	1.8560	1.9608	2.0727	2.0950
676	1.8367	1.8561	1.9608	2.0726	2.0949
677	1.8368	1.8561	1.9608	2.0725	2.0948
678	1.8369	1.8562	1.9608	2.0725	2.0947
679	1.8370	1.8563	1.9608	2.0724	2.0946
680	1.8371	1.8564	1.9608	2.0723	2.0945
681	1.8372	1.8564	1.9608	2.0722	2.0944
682	1.8372	1.8565	1.9608	2.0721	2.0943
683	1.8373	1.8566	1.9608	2.0720	2.0942
684	1.8374	1.8566	1.9608	2.0719	2.0941
685	1.8375	1.8567	1.9608	2.0719	2.0940
686	1.8376	1.8568	1.9608	2.0718	2.0939
687	1.8377	1.8569	1.9608	2.0717	2.0938
688	1.8378	1.8569	1.9608	2.0716	2.0937
689	1.8378	1.8570	1.9608	2.0715	2.0936
690	1.8379	1.8571	1.9608	2.0714	2.0935
691	1.8380	1.8571	1.9608	2.0714	2.0934
692	1.8381	1.8572	1.9608	2.0713	2.0933
693	1.8382	1.8573	1.9608	2.0712	2.0932
694	1.8383	1.8574	1.9608	2.0711	2.0931
695	1.8383	1.8574	1.9608	2.0710	2.0930
696	1.8384	1.8575	1.9608	2.0709	2.0929
697	1.8385	1.8576	1.9608	2.0709	2.0928
698	1.8386	1.8576	1.9608	2.0708	2.0927
699	1.8387	1.8577	1.9608	2.0707	2.0926
700	1.8388	1.8578	1.9608	2.0706	2.0925
701	1.8388	1.8579	1.9608	2.0705	2.0924
702	1.8389	1.8579	1.9608	2.0704	2.0923
703	1.8390	1.8580	1.9608	2.0704	2.0922
704	1.8391	1.8581	1.9608	2.0703	2.0921
705	1.8392	1.8581	1.9608	2.0702	2.0920
706	1.8393	1.8582	1.9608	2.0701	2.0919
707	1.8393	1.8583	1.9608	2.0700	2.0918
708	1.8394	1.8583	1.9608	2.0700	2.0917
709	1.8395	1.8584	1.9608	2.0699	2.0916
710	1.8396	1.8585	1.9608	2.0698	2.0915
711	1.8397	1.8586	1.9608	2.0697	2.0914
712	1.8397	1.8586	1.9608	2.0696	2.0913
713	1.8398	1.8587	1.9608	2.0696	2.0912

Coefficients for CIs. LoAs considered <u>individually.</u>

ν	$c_{0.025}$	$c_{0.05}$	$c_{0.50}$	$c_{0.95}$	$c_{0.975}$
714	1.8399	1.8588	1.9608	2.0695	2.0911
715	1.8400	1.8588	1.9608	2.0694	2.0910
716	1.8401	1.8589	1.9608	2.0693	2.0909
717	1.8401	1.8590	1.9608	2.0692	2.0908
718	1.8402	1.8590	1.9608	2.0692	2.0907
719	1.8403	1.8591	1.9608	2.0691	2.0906
720	1.8404	1.8592	1.9608	2.0690	2.0905
721	1.8405	1.8592	1.9608	2.0689	2.0904
722	1.8405	1.8593	1.9608	2.0688	2.0903
723	1.8406	1.8594	1.9608	2.0688	2.0902
724	1.8407	1.8594	1.9608	2.0687	2.0902
725	1.8408	1.8595	1.9608	2.0686	2.0901
726	1.8409	1.8596	1.9608	2.0685	2.0900
727	1.8409	1.8596	1.9608	2.0684	2.0899
728	1.8410	1.8597	1.9608	2.0684	2.0898
729	1.8411	1.8598	1.9608	2.0683	2.0897
730	1.8412	1.8598	1.9608	2.0682	2.0896
731	1.8413	1.8599	1.9608	2.0681	2.0895
732	1.8413	1.8600	1.9608	2.0681	2.0894
733	1.8414	1.8600	1.9608	2.0680	2.0893
734	1.8415	1.8601	1.9608	2.0679	2.0892
735	1.8416	1.8602	1.9608	2.0678	2.0891
736	1.8416	1.8602	1.9608	2.0678	2.0890
737	1.8417	1.8603	1.9608	2.0677	2.0889
738	1.8418	1.8604	1.9608	2.0676	2.0889
739	1.8419	1.8604	1.9608	2.0675	2.0888
740	1.8419	1.8605	1.9608	2.0675	2.0887
741	1.8420	1.8605	1.9608	2.0674	2.0886
742	1.8421	1.8606	1.9608	2.0673	2.0885
743	1.8422	1.8607	1.9608	2.0672	2.0884
744	1.8423	1.8607	1.9608	2.0672	2.0883
745	1.8423	1.8608	1.9608	2.0671	2.0882
746	1.8424	1.8609	1.9608	2.0670	2.0881
747	1.8425	1.8609	1.9608	2.0669	2.0880
748	1.8426	1.8610	1.9608	2.0669	2.0880
749	1.8426	1.8611	1.9608	2.0668	2.0879
750	1.8427	1.8611	1.9608	2.0667	2.0878
751	1.8428	1.8612	1.9608	2.0666	2.0877
752	1.8429	1.8612	1.9608	2.0666	2.0876
753	1.8429	1.8613	1.9608	2.0665	2.0875
754	1.8430	1.8614	1.9608	2.0664	2.0874
755	1.8431	1.8614	1.9608	2.0663	2.0873
756	1.8432	1.8615	1.9608	2.0663	2.0872
757	1.8432	1.8616	1.9608	2.0662	2.0872
758	1.8433	1.8616	1.9608	2.0661	2.0871
759	1.8434	1.8617	1.9608	2.0660	2.0870
760	1.8434	1.8618	1.9608	2.0660	2.0869
761	1.8435	1.8618	1.9607	2.0659	2.0868
762	1.8436	1.8619	1.9607	2.0658	2.0867
763	1.8437	1.8619	1.9607	2.0658	2.0866
764	1.8437	1.8620	1.9607	2.0657	2.0865
765	1.8438	1.8621	1.9607	2.0656	2.0865
766	1.8439	1.8621	1.9607	2.0655	2.0864
767	1.8440	1.8622	1.9607	2.0655	2.0863
768	1.8440	1.8622	1.9607	2.0654	2.0862
769	1.8441	1.8623	1.9607	2.0653	2.0861
770	1.8442	1.8624	1.9607	2.0653	2.0860
771	1.8442	1.8624	1.9607	2.0652	2.0859
772	1.8443	1.8625	1.9607	2.0651	2.0859
773	1.8444	1.8626	1.9607	2.0650	2.0858
774	1.8445	1.8626	1.9607	2.0650	2.0857
775	1.8445	1.8627	1.9607	2.0649	2.0856
776	1.8446	1.8627	1.9607	2.0648	2.0855
777	1.8447	1.8628	1.9607	2.0648	2.0854
778	1.8447	1.8629	1.9607	2.0647	2.0854
779	1.8448	1.8629	1.9607	2.0646	2.0853
780	1.8449	1.8630	1.9607	2.0646	2.0852
781	1.8450	1.8630	1.9607	2.0645	2.0851
782	1.8450	1.8631	1.9607	2.0644	2.0850
783	1.8451	1.8632	1.9607	2.0643	2.0849
784	1.8452	1.8632	1.9607	2.0643	2.0849
785	1.8452	1.8633	1.9607	2.0642	2.0848
786	1.8453	1.8633	1.9607	2.0641	2.0847
787	1.8454	1.8634	1.9607	2.0641	2.0846
788	1.8455	1.8634	1.9607	2.0640	2.0845
789	1.8455	1.8635	1.9607	2.0639	2.0844
790	1.8456	1.8636	1.9607	2.0639	2.0844
791	1.8457	1.8636	1.9607	2.0638	2.0843
792	1.8457	1.8637	1.9607	2.0637	2.0842
793	1.8458	1.8637	1.9607	2.0637	2.0841

Coefficients for CIs. LoAs considered <u>individually.</u>

ν	$c_{0.025}$	$c_{0.05}$	$c_{0.50}$	$c_{0.95}$	$c_{0.975}$
794	1.8459	1.8638	1.9607	2.0636	2.0840
795	1.8459	1.8639	1.9607	2.0635	2.0839
796	1.8460	1.8639	1.9607	2.0635	2.0839
797	1.8461	1.8640	1.9607	2.0634	2.0838
798	1.8461	1.8640	1.9607	2.0633	2.0837
799	1.8462	1.8641	1.9607	2.0633	2.0836
800	1.8463	1.8641	1.9607	2.0632	2.0835
801	1.8463	1.8642	1.9607	2.0631	2.0835
802	1.8464	1.8643	1.9607	2.0631	2.0834
803	1.8465	1.8643	1.9607	2.0630	2.0833
804	1.8466	1.8644	1.9607	2.0629	2.0832
805	1.8466	1.8644	1.9607	2.0629	2.0831
806	1.8467	1.8645	1.9607	2.0628	2.0831
807	1.8468	1.8646	1.9607	2.0627	2.0830
808	1.8468	1.8646	1.9607	2.0627	2.0829
809	1.8469	1.8647	1.9607	2.0626	2.0828
810	1.8470	1.8647	1.9607	2.0625	2.0827
811	1.8470	1.8648	1.9607	2.0625	2.0827
812	1.8471	1.8648	1.9607	2.0624	2.0826
813	1.8472	1.8649	1.9607	2.0623	2.0825
814	1.8472	1.8649	1.9607	2.0623	2.0824
815	1.8473	1.8650	1.9607	2.0622	2.0823
816	1.8474	1.8651	1.9607	2.0621	2.0823
817	1.8474	1.8651	1.9607	2.0621	2.0822
818	1.8475	1.8652	1.9607	2.0620	2.0821
819	1.8476	1.8652	1.9607	2.0619	2.0820
820	1.8476	1.8653	1.9607	2.0619	2.0820
821	1.8477	1.8653	1.9607	2.0618	2.0819
822	1.8478	1.8654	1.9607	2.0617	2.0818
823	1.8478	1.8654	1.9607	2.0617	2.0817
824	1.8479	1.8655	1.9607	2.0616	2.0817
825	1.8479	1.8656	1.9607	2.0616	2.0816
826	1.8480	1.8656	1.9607	2.0615	2.0815
827	1.8481	1.8657	1.9607	2.0614	2.0814
828	1.8481	1.8657	1.9607	2.0614	2.0813
829	1.8482	1.8658	1.9607	2.0613	2.0813
830	1.8483	1.8658	1.9607	2.0612	2.0812
831	1.8483	1.8659	1.9607	2.0612	2.0811
832	1.8484	1.8659	1.9607	2.0611	2.0810
833	1.8485	1.8660	1.9607	2.0610	2.0810
834	1.8485	1.8661	1.9607	2.0610	2.0809
835	1.8486	1.8661	1.9607	2.0609	2.0808
836	1.8487	1.8662	1.9607	2.0609	2.0807
837	1.8487	1.8662	1.9607	2.0608	2.0807
838	1.8488	1.8663	1.9607	2.0607	2.0806
839	1.8488	1.8663	1.9607	2.0607	2.0805
840	1.8489	1.8664	1.9607	2.0606	2.0804
841	1.8490	1.8664	1.9607	2.0605	2.0804
842	1.8490	1.8665	1.9607	2.0605	2.0803
843	1.8491	1.8665	1.9607	2.0604	2.0802
844	1.8492	1.8666	1.9607	2.0604	2.0801
845	1.8492	1.8666	1.9607	2.0603	2.0801
846	1.8493	1.8667	1.9607	2.0602	2.0800
847	1.8494	1.8668	1.9607	2.0602	2.0799
848	1.8494	1.8668	1.9607	2.0601	2.0798
849	1.8495	1.8669	1.9607	2.0601	2.0798
850	1.8495	1.8669	1.9607	2.0600	2.0797
851	1.8496	1.8670	1.9607	2.0599	2.0796
852	1.8497	1.8670	1.9607	2.0599	2.0795
853	1.8497	1.8671	1.9607	2.0598	2.0795
854	1.8498	1.8671	1.9607	2.0597	2.0794
855	1.8499	1.8672	1.9607	2.0597	2.0793
856	1.8499	1.8672	1.9607	2.0596	2.0793
857	1.8500	1.8673	1.9607	2.0596	2.0792
858	1.8500	1.8673	1.9607	2.0595	2.0791
859	1.8501	1.8674	1.9607	2.0594	2.0790
860	1.8502	1.8674	1.9607	2.0594	2.0790
861	1.8502	1.8675	1.9607	2.0593	2.0789
862	1.8503	1.8675	1.9607	2.0593	2.0788
863	1.8503	1.8676	1.9607	2.0592	2.0788
864	1.8504	1.8676	1.9607	2.0591	2.0787
865	1.8505	1.8677	1.9607	2.0591	2.0786
866	1.8505	1.8677	1.9607	2.0590	2.0785
867	1.8506	1.8678	1.9607	2.0590	2.0785
868	1.8506	1.8678	1.9607	2.0589	2.0784
869	1.8507	1.8679	1.9607	2.0588	2.0783
870	1.8508	1.8679	1.9607	2.0588	2.0783
871	1.8508	1.8680	1.9607	2.0587	2.0782
872	1.8509	1.8680	1.9606	2.0587	2.0781
873	1.8509	1.8681	1.9606	2.0586	2.0780

Coefficients for CIs. LoAs considered ***individually.***

ν	$c_{0.025}$	$c_{0.05}$	$c_{0.50}$	$c_{0.95}$	$c_{0.975}$
874	1.8510	1.8682	1.9606	2.0586	2.0780
875	1.8511	1.8682	1.9606	2.0585	2.0779
876	1.8511	1.8683	1.9606	2.0584	2.0778
877	1.8512	1.8683	1.9606	2.0584	2.0778
878	1.8512	1.8684	1.9606	2.0583	2.0777
879	1.8513	1.8684	1.9606	2.0583	2.0776
880	1.8514	1.8685	1.9606	2.0582	2.0776
881	1.8514	1.8685	1.9606	2.0581	2.0775
882	1.8515	1.8686	1.9606	2.0581	2.0774
883	1.8515	1.8686	1.9606	2.0580	2.0773
884	1.8516	1.8687	1.9606	2.0580	2.0773
885	1.8517	1.8687	1.9606	2.0579	2.0772
886	1.8517	1.8688	1.9606	2.0579	2.0771
887	1.8518	1.8688	1.9606	2.0578	2.0771
888	1.8518	1.8689	1.9606	2.0577	2.0770
889	1.8519	1.8689	1.9606	2.0577	2.0769
890	1.8520	1.8690	1.9606	2.0576	2.0769
891	1.8520	1.8690	1.9606	2.0576	2.0768
892	1.8521	1.8691	1.9606	2.0575	2.0767
893	1.8521	1.8691	1.9606	2.0575	2.0767
894	1.8522	1.8691	1.9606	2.0574	2.0766
895	1.8522	1.8692	1.9606	2.0573	2.0765
896	1.8523	1.8692	1.9606	2.0573	2.0765
897	1.8524	1.8693	1.9606	2.0572	2.0764
898	1.8524	1.8693	1.9606	2.0572	2.0763
899	1.8525	1.8694	1.9606	2.0571	2.0763
900	1.8525	1.8694	1.9606	2.0571	2.0762
901	1.8526	1.8695	1.9606	2.0570	2.0761
902	1.8526	1.8695	1.9606	2.0570	2.0761
903	1.8527	1.8696	1.9606	2.0569	2.0760
904	1.8528	1.8696	1.9606	2.0568	2.0759
905	1.8528	1.8697	1.9606	2.0568	2.0758
906	1.8529	1.8697	1.9606	2.0567	2.0758
907	1.8529	1.8698	1.9606	2.0567	2.0757
908	1.8530	1.8698	1.9606	2.0566	2.0757
909	1.8530	1.8699	1.9606	2.0566	2.0756
910	1.8531	1.8699	1.9606	2.0565	2.0755
911	1.8532	1.8700	1.9606	2.0565	2.0755
912	1.8532	1.8700	1.9606	2.0564	2.0754
913	1.8533	1.8701	1.9606	2.0563	2.0753
914	1.8533	1.8701	1.9606	2.0563	2.0753
915	1.8534	1.8702	1.9606	2.0562	2.0752
916	1.8534	1.8702	1.9606	2.0562	2.0751
917	1.8535	1.8703	1.9606	2.0561	2.0751
918	1.8536	1.8703	1.9606	2.0561	2.0750
919	1.8536	1.8704	1.9606	2.0560	2.0749
920	1.8537	1.8704	1.9606	2.0560	2.0749
921	1.8537	1.8704	1.9606	2.0559	2.0748
922	1.8538	1.8705	1.9606	2.0559	2.0747
923	1.8538	1.8705	1.9606	2.0558	2.0747
924	1.8539	1.8706	1.9606	2.0558	2.0746
925	1.8539	1.8706	1.9606	2.0557	2.0745
926	1.8540	1.8707	1.9606	2.0556	2.0745
927	1.8541	1.8707	1.9606	2.0556	2.0744
928	1.8541	1.8708	1.9606	2.0555	2.0743
929	1.8542	1.8708	1.9606	2.0555	2.0743
930	1.8542	1.8709	1.9606	2.0554	2.0742
931	1.8543	1.8709	1.9606	2.0554	2.0742
932	1.8543	1.8710	1.9606	2.0553	2.0741
933	1.8544	1.8710	1.9606	2.0553	2.0740
934	1.8544	1.8710	1.9606	2.0552	2.0740
935	1.8545	1.8711	1.9606	2.0552	2.0739
936	1.8545	1.8711	1.9606	2.0551	2.0738
937	1.8546	1.8712	1.9606	2.0551	2.0738
938	1.8547	1.8712	1.9606	2.0550	2.0737
939	1.8547	1.8713	1.9606	2.0550	2.0736
940	1.8548	1.8713	1.9606	2.0549	2.0736
941	1.8548	1.8714	1.9606	2.0549	2.0735
942	1.8549	1.8714	1.9606	2.0548	2.0735
943	1.8549	1.8715	1.9606	2.0547	2.0734
944	1.8550	1.8715	1.9606	2.0547	2.0733
945	1.8550	1.8716	1.9606	2.0546	2.0733
946	1.8551	1.8716	1.9606	2.0546	2.0732
947	1.8551	1.8716	1.9606	2.0545	2.0731
948	1.8552	1.8717	1.9606	2.0545	2.0731
949	1.8552	1.8717	1.9606	2.0544	2.0730
950	1.8553	1.8718	1.9606	2.0544	2.0730
951	1.8553	1.8718	1.9606	2.0543	2.0729
952	1.8554	1.8719	1.9606	2.0543	2.0728
953	1.8555	1.8719	1.9606	2.0542	2.0728

Coefficients for CIs. LoAs considered <u>individually.</u>

ν	$c_{0.025}$	$c_{0.05}$	$c_{0.50}$	$c_{0.95}$	$c_{0.975}$
954	1.8555	1.8720	1.9606	2.0542	2.0727
955	1.8556	1.8720	1.9606	2.0541	2.0727
956	1.8556	1.8720	1.9606	2.0541	2.0726
957	1.8557	1.8721	1.9606	2.0540	2.0725
958	1.8557	1.8721	1.9606	2.0540	2.0725
959	1.8558	1.8722	1.9606	2.0539	2.0724
960	1.8558	1.8722	1.9606	2.0539	2.0723
961	1.8559	1.8723	1.9606	2.0538	2.0723
962	1.8559	1.8723	1.9606	2.0538	2.0722
963	1.8560	1.8724	1.9606	2.0537	2.0722
964	1.8560	1.8724	1.9606	2.0537	2.0721
965	1.8561	1.8724	1.9606	2.0536	2.0720
966	1.8561	1.8725	1.9606	2.0536	2.0720
967	1.8562	1.8725	1.9606	2.0535	2.0719
968	1.8562	1.8726	1.9606	2.0535	2.0719
969	1.8563	1.8726	1.9606	2.0534	2.0718
970	1.8563	1.8727	1.9606	2.0534	2.0717
971	1.8564	1.8727	1.9606	2.0533	2.0717
972	1.8564	1.8727	1.9606	2.0533	2.0716
973	1.8565	1.8728	1.9606	2.0532	2.0716
974	1.8565	1.8728	1.9606	2.0532	2.0715
975	1.8566	1.8729	1.9606	2.0531	2.0714
976	1.8566	1.8729	1.9606	2.0531	2.0714
977	1.8567	1.8730	1.9606	2.0530	2.0713
978	1.8567	1.8730	1.9606	2.0530	2.0713
979	1.8568	1.8730	1.9606	2.0529	2.0712
980	1.8569	1.8731	1.9606	2.0529	2.0711
981	1.8569	1.8731	1.9606	2.0528	2.0711
982	1.8570	1.8732	1.9606	2.0528	2.0710
983	1.8570	1.8732	1.9606	2.0527	2.0710
984	1.8571	1.8733	1.9606	2.0527	2.0709
985	1.8571	1.8733	1.9606	2.0526	2.0709
986	1.8572	1.8733	1.9606	2.0526	2.0708
987	1.8572	1.8734	1.9606	2.0525	2.0707
988	1.8573	1.8734	1.9606	2.0525	2.0707
989	1.8573	1.8735	1.9606	2.0524	2.0706
990	1.8574	1.8735	1.9606	2.0524	2.0706
991	1.8574	1.8736	1.9606	2.0523	2.0705
992	1.8575	1.8736	1.9606	2.0523	2.0704
993	1.8575	1.8736	1.9606	2.0522	2.0704
994	1.8576	1.8737	1.9606	2.0522	2.0703
995	1.8576	1.8737	1.9606	2.0522	2.0703
996	1.8577	1.8738	1.9606	2.0521	2.0702
997	1.8577	1.8738	1.9606	2.0521	2.0702
998	1.8578	1.8739	1.9606	2.0520	2.0701
999	1.8578	1.8739	1.9606	2.0520	2.0700
1000	1.8578	1.8739	1.9606	2.0519	2.0700

```
DP=10;
prompt = 'How many pairs in sample? ';
sampsize = input(prompt)

prompt ='Area of left tail in confidence interval? (e.g. 0.975)';
ptest= input(prompt)

degf=sampsize-1;
zscore = norminv( 0.975,0,1);
stepper=0.01*sampsize^0.5;
toprange=1000;
noncentpar=zscore*sampsize^.5;


nctdist=[-4:stepper:toprange];
boxes=length(nctdist);

qdist=nctdist/sampsize^.5;

distpdf =zeros(1,boxes);

distpdf = nctpdf(nctdist,degf, noncentpar);

cump= nctcdf(nctdist,degf, noncentpar);

boxes=length(qdist);
format long

sampsize;
interval=qdist(boxes)-qdist(boxes-1);

s=1;
while cump(s)<ptest
s=s+1;
 end
interpq= qdist(s-1)+ ( ptest-cump(s-1)) / (cump(s)-cump(s-1))*( qdist(s)-
qdist(s-1));
for preciz=3:1:DP
stepper= (sampsize^0.5)* (qdist(s)-qdist(s-1))/10;
toprange=qdist(s) *sampsize^0.5;
botrange=qdist(s-1) *sampsize^0.5;
nctdist=[botrange:stepper:toprange];
boxes=length(nctdist);
qdist=nctdist/sampsize^.5;

distpdf =zeros(1,boxes);

distpdf = nctpdf(nctdist,degf, noncentpar);

cump= nctcdf(nctdist,degf, noncentpar);

boxes=length(qdist);
s=1;
while cump(s)<ptest
```

```
s=s+1;
 end

end
interpq= qdist(s-1)+ ( ptest-cump(s-1)) / (cump(s)-cump(s-1))*( qdist(s)-
qdist(s-1));




disp(' Z is 1.96.')
disp(' sample size is '),  disp(sampsize)
disp(' gamma is '),  disp(ptest)
disp(' Coefficient for BA confidence limits for LOAs considered individually
is ')
disp(interpq)
```

Coefficients for calculating exact confidence intervals for 95% LoAs considered as a pair, for different degrees of freedom $\upsilon = n - 1$

$\boldsymbol{\nu}$	$c_{t_{0.025}}$	$c_{t_{0.05}}$	$c_{t_{0.50}}$	$c_{t_{0.95}}$	$c_{t_{0.975}}$
1	0.9744	1.1237	3.3756	36.5192	73.0772
2	1.1051	1.2333	2.6342	9.7888	13.9396
3	1.1839	1.3004	2.4157	6.3411	8.1045
4	1.2397	1.3481	2.3080	5.0769	6.1569
5	1.2825	1.3847	2.2428	4.4222	5.1983
6	1.3170	1.4142	2.1988	4.0196	4.6276
7	1.3457	1.4387	2.1670	3.7455	4.2478
8	1.3702	1.4596	2.1429	3.5459	3.9757
9	1.3915	1.4778	2.1239	3.3934	3.7706
10	1.4102	1.4938	2.1085	3.2728	3.6100
11	1.4269	1.5081	2.0958	3.1747	3.4805
12	1.4419	1.5209	2.0852	3.0931	3.3736
13	1.4555	1.5325	2.0761	3.0241	3.2837
14	1.4680	1.5431	2.0682	2.9649	3.2069
15	1.4794	1.5529	2.0614	2.9135	3.1405
16	1.4900	1.5619	2.0554	2.8683	3.0824
17	1.4998	1.5703	2.0501	2.8283	3.0311
18	1.5089	1.5780	2.0453	2.7925	2.9854
19	1.5175	1.5853	2.0410	2.7603	2.9445
20	1.5255	1.5922	2.0371	2.7312	2.9075
21	1.5330	1.5986	2.0336	2.7047	2.8739
22	1.5401	1.6046	2.0304	2.6805	2.8433
23	1.5469	1.6104	2.0275	2.6583	2.8152
24	1.5533	1.6158	2.0248	2.6377	2.7893
25	1.5593	1.6210	2.0223	2.6187	2.7654
26	1.5651	1.6259	2.0200	2.6011	2.7433
27	1.5706	1.6305	2.0178	2.5846	2.7226
28	1.5758	1.6350	2.0158	2.5693	2.7034
29	1.5808	1.6393	2.0140	2.5549	2.6854
30	1.5856	1.6434	2.0122	2.5414	2.6685
31	1.5902	1.6473	2.0106	2.5287	2.6526
32	1.5947	1.6511	2.0091	2.5167	2.6377
33	1.5989	1.6547	2.0076	2.5053	2.6236
34	1.6030	1.6582	2.0063	2.4946	2.6102
35	1.6070	1.6615	2.0050	2.4844	2.5975
36	1.6108	1.6647	2.0038	2.4747	2.5855
37	1.6144	1.6679	2.0026	2.4655	2.5741
38	1.6180	1.6709	2.0015	2.4567	2.5632
39	1.6214	1.6738	2.0005	2.4484	2.5528
40	1.6247	1.6766	1.9995	2.4404	2.5429
41	1.6280	1.6794	1.9986	2.4327	2.5335
42	1.6311	1.6820	1.9977	2.4254	2.5244
43	1.6341	1.6846	1.9968	2.4184	2.5157
44	1.6370	1.6871	1.9960	2.4116	2.5074
45	1.6399	1.6895	1.9952	2.4051	2.4994
46	1.6427	1.6918	1.9945	2.3989	2.4917
47	1.6453	1.6941	1.9938	2.3929	2.4843
48	1.6480	1.6964	1.9931	2.3871	2.4772
49	1.6505	1.6985	1.9924	2.3816	2.4703
50	1.6530	1.7006	1.9918	2.3762	2.4637
51	1.6554	1.7027	1.9912	2.3710	2.4573
52	1.6578	1.7047	1.9906	2.3660	2.4511
53	1.6601	1.7066	1.9900	2.3611	2.4452
54	1.6623	1.7085	1.9895	2.3564	2.4394
55	1.6645	1.7104	1.9890	2.3519	2.4338
56	1.6666	1.7122	1.9885	2.3475	2.4284
57	1.6687	1.7140	1.9880	2.3432	2.4232
58	1.6708	1.7157	1.9875	2.3391	2.4181
59	1.6728	1.7174	1.9870	2.3351	2.4132
60	1.6747	1.7191	1.9866	2.3312	2.4084
61	1.6766	1.7207	1.9862	2.3274	2.4037
62	1.6785	1.7223	1.9858	2.3237	2.3992
63	1.6803	1.7238	1.9854	2.3201	2.3948
64	1.6821	1.7254	1.9850	2.3166	2.3905
65	1.6839	1.7269	1.9846	2.3132	2.3864
66	1.6856	1.7283	1.9842	2.3099	2.3823
67	1.6873	1.7297	1.9839	2.3067	2.3784
68	1.6889	1.7312	1.9835	2.3035	2.3745
69	1.6906	1.7325	1.9832	2.3005	2.3708
70	1.6922	1.7339	1.9829	2.2975	2.3671
71	1.6937	1.7352	1.9825	2.2946	2.3636
72	1.6953	1.7365	1.9822	2.2917	2.3601
73	1.6968	1.7378	1.9819	2.2889	2.3567
74	1.6982	1.7390	1.9816	2.2862	2.3534

Coefficients for CIs. LoAs considered <u>as a pair.</u>

ν	$c_{t_{0.025}}$	$c_{t_{0.05}}$	$c_{t_{0.50}}$	$c_{t_{0.95}}$	$c_{t_{0.975}}$
75	1.6997	1.7403	1.9814	2.2836	2.3501
A76	1.7011	1.7415	1.9811	2.2810	2.3470
77	1.7025	1.7427	1.9808	2.2784	2.3439
78	1.7039	1.7438	1.9805	2.2760	2.3408
79	1.7052	1.7450	1.9803	2.2735	2.3379
80	1.7066	1.7461	1.9800	2.2712	2.3350
81	1.7079	1.7472	1.9798	2.2688	2.3321
82	1.7092	1.7483	1.9796	2.2666	2.3294
83	1.7104	1.7494	1.9793	2.2643	2.3266
84	1.7117	1.7504	1.9791	2.2621	2.3240
85	1.7129	1.7515	1.9789	2.2600	2.3214
86	1.7141	1.7525	1.9787	2.2579	2.3188
87	1.7153	1.7535	1.9784	2.2558	2.3163
88	1.7165	1.7545	1.9782	2.2538	2.3138
89	1.7176	1.7555	1.9780	2.2518	2.3114
90	1.7188	1.7564	1.9778	2.2499	2.3090
91	1.7199	1.7574	1.9776	2.2480	2.3067
92	1.7210	1.7583	1.9775	2.2461	2.3044
93	1.7221	1.7593	1.9773	2.2443	2.3022
94	1.7232	1.7602	1.9771	2.2425	2.3000
95	1.7242	1.7611	1.9769	2.2407	2.2978
96	1.7252	1.7619	1.9767	2.2389	2.2957
97	1.7263	1.7628	1.9766	2.2372	2.2936
98	1.7273	1.7637	1.9764	2.2355	2.2916
99	1.7283	1.7645	1.9762	2.2339	2.2896
100	1.7293	1.7653	1.9761	2.2323	2.2876
101	1.7302	1.7662	1.9759	2.2307	2.2856
102	1.7312	1.7670	1.9758	2.2291	2.2837
103	1.7322	1.7678	1.9756	2.2275	2.2818
104	1.7331	1.7686	1.9755	2.2260	2.2800
105	1.7340	1.7694	1.9753	2.2245	2.2782
106	1.7349	1.7701	1.9752	2.2230	2.2764
107	1.7358	1.7709	1.9750	2.2216	2.2746
108	1.7367	1.7716	1.9749	2.2202	2.2729
109	1.7376	1.7724	1.9748	2.2187	2.2712
110	1.7384	1.7731	1.9746	2.2174	2.2695
111	1.7393	1.7738	1.9745	2.2160	2.2678
112	1.7401	1.7746	1.9744	2.2146	2.2662
113	1.7410	1.7753	1.9742	2.2133	2.2646
114	1.7418	1.7760	1.9741	2.2120	2.2630
115	1.7426	1.7767	1.9740	2.2107	2.2614
116	1.7434	1.7773	1.9739	2.2095	2.2599
117	1.7442	1.7780	1.9738	2.2082	2.2584
118	1.7450	1.7787	1.9736	2.2070	2.2569
119	1.7458	1.7793	1.9735	2.2058	2.2554
120	1.7466	1.7800	1.9734	2.2046	2.2539
121	1.7473	1.7806	1.9733	2.2034	2.2525
122	1.7481	1.7813	1.9732	2.2022	2.2511
123	1.7488	1.7819	1.9731	2.2011	2.2497
124	1.7495	1.7825	1.9730	2.1999	2.2483
125	1.7503	1.7831	1.9729	2.1988	2.2470
126	1.7510	1.7837	1.9728	2.1977	2.2456
127	1.7517	1.7843	1.9727	2.1966	2.2443
128	1.7524	1.7849	1.9726	2.1955	2.2430
129	1.7531	1.7855	1.9725	2.1945	2.2417
130	1.7538	1.7861	1.9724	2.1934	2.2404
131	1.7545	1.7867	1.9723	2.1924	2.2392
132	1.7552	1.7873	1.9722	2.1914	2.2379
133	1.7558	1.7878	1.9721	2.1903	2.2367
134	1.7565	1.7884	1.9720	2.1894	2.2355
135	1.7571	1.7889	1.9719	2.1884	2.2343
136	1.7578	1.7895	1.9719	2.1874	2.2331
137	1.7584	1.7900	1.9718	2.1864	2.2320
138	1.7591	1.7906	1.9717	2.1855	2.2308
139	1.7597	1.7911	1.9716	2.1845	2.2297
140	1.7603	1.7916	1.9715	2.1836	2.2286
141	1.7609	1.7922	1.9714	2.1827	2.2274
142	1.7615	1.7927	1.9714	2.1818	2.2263
143	1.7621	1.7932	1.9713	2.1809	2.2253
144	1.7627	1.7937	1.9712	2.1800	2.2242
145	1.7633	1.7942	1.9711	2.1791	2.2231
146	1.7639	1.7947	1.9710	2.1783	2.2221
147	1.7645	1.7952	1.9710	2.1774	2.2210
148	1.7651	1.7957	1.9709	2.1766	2.2200
149	1.7657	1.7962	1.9708	2.1757	2.2190
150	1.7662	1.7966	1.9708	2.1749	2.2180
151	1.7668	1.7971	1.9707	2.1741	2.2170
152	1.7673	1.7976	1.9706	2.1733	2.2160
153	1.7679	1.7980	1.9705	2.1725	2.2151
154	1.7684	1.7985	1.9705	2.1717	2.2141

Coefficients for CIs. LoAs considered <u>as a pair.</u>

ν	$c_{t_{0.025}}$	$c_{t_{0.05}}$	$c_{t_{0.50}}$	$c_{t_{0.95}}$	$c_{t_{0.975}}$
155	1.7690	1.7990	1.9704	2.1709	2.2131
156	1.7695	1.7994	1.9703	2.1701	2.2122
157	1.7700	1.7999	1.9703	2.1693	2.2113
158	1.7706	1.8003	1.9702	2.1686	2.2104
159	1.7711	1.8008	1.9701	2.1678	2.2095
160	1.7716	1.8012	1.9701	2.1671	2.2085
161	1.7721	1.8016	1.9700	2.1664	2.2077
162	1.7726	1.8021	1.9700	2.1656	2.2068
163	1.7731	1.8025	1.9699	2.1649	2.2059
164	1.7736	1.8029	1.9698	2.1642	2.2050
165	1.7741	1.8033	1.9698	2.1635	2.2042
166	1.7746	1.8038	1.9697	2.1628	2.2033
167	1.7751	1.8042	1.9697	2.1621	2.2025
168	1.7756	1.8046	1.9696	2.1614	2.2017
169	1.7761	1.8050	1.9695	2.1607	2.2008
170	1.7766	1.8054	1.9695	2.1600	2.2000
171	1.7770	1.8058	1.9694	2.1594	2.1992
172	1.7775	1.8062	1.9694	2.1587	2.1984
173	1.7780	1.8066	1.9693	2.1581	2.1976
174	1.7784	1.8070	1.9693	2.1574	2.1968
175	1.7789	1.8074	1.9692	2.1568	2.1961
176	1.7793	1.8077	1.9692	2.1561	2.1953
177	1.7798	1.8081	1.9691	2.1555	2.1945
178	1.7802	1.8085	1.9691	2.1549	2.1938
179	1.7807	1.8089	1.9690	2.1543	2.1930
180	1.7811	1.8092	1.9690	2.1536	2.1923
181	1.7816	1.8096	1.9689	2.1530	2.1916
182	1.7820	1.8100	1.9689	2.1524	2.1908
183	1.7824	1.8103	1.9688	2.1518	2.1901
184	1.7828	1.8107	1.9688	2.1512	2.1894
185	1.7833	1.8111	1.9687	2.1507	2.1887
186	1.7837	1.8114	1.9687	2.1501	2.1880
187	1.7841	1.8118	1.9686	2.1495	2.1873
188	1.7845	1.8121	1.9686	2.1489	2.1866
189	1.7849	1.8125	1.9685	2.1484	2.1859
190	1.7853	1.8128	1.9685	2.1478	2.1852
191	1.7857	1.8132	1.9685	2.1472	2.1846
192	1.7862	1.8135	1.9684	2.1467	2.1839
193	1.7866	1.8138	1.9684	2.1461	2.1832
194	1.7869	1.8142	1.9683	2.1456	2.1826
195	1.7873	1.8145	1.9683	2.1451	2.1819
196	1.7877	1.8148	1.9682	2.1445	2.1813
197	1.7881	1.8152	1.9682	2.1440	2.1806
198	1.7885	1.8155	1.9682	2.1435	2.1800
199	1.7889	1.8158	1.9681	2.1429	2.1794
200	1.7893	1.8161	1.9681	2.1424	2.1788
201	1.7896	1.8165	1.9680	2.1419	2.1781
202	1.7900	1.8168	1.9680	2.1414	2.1775
203	1.7904	1.8171	1.9680	2.1409	2.1769
204	1.7908	1.8174	1.9679	2.1404	2.1763
205	1.7911	1.8177	1.9679	2.1399	2.1757
206	1.7915	1.8180	1.9678	2.1394	2.1751
207	1.7919	1.8183	1.9678	2.1389	2.1745
208	1.7922	1.8186	1.9678	2.1384	2.1739
209	1.7926	1.8189	1.9677	2.1380	2.1734
210	1.7929	1.8192	1.9677	2.1375	2.1728
211	1.7933	1.8195	1.9677	2.1370	2.1722
212	1.7936	1.8198	1.9676	2.1365	2.1716
213	1.7940	1.8201	1.9676	2.1361	2.1711
214	1.7943	1.8204	1.9675	2.1356	2.1705
215	1.7947	1.8207	1.9675	2.1351	2.1700
216	1.7950	1.8210	1.9675	2.1347	2.1694
217	1.7954	1.8213	1.9674	2.1342	2.1689
218	1.7957	1.8216	1.9674	2.1338	2.1683
219	1.7960	1.8219	1.9674	2.1333	2.1678
220	1.7964	1.8221	1.9673	2.1329	2.1673
221	1.7967	1.8224	1.9673	2.1325	2.1667
222	1.7970	1.8227	1.9673	2.1320	2.1662
223	1.7973	1.8230	1.9672	2.1316	2.1657
224	1.7977	1.8232	1.9672	2.1312	2.1652
225	1.7980	1.8235	1.9672	2.1307	2.1646
226	1.7983	1.8238	1.9671	2.1303	2.1641
227	1.7986	1.8241	1.9671	2.1299	2.1636
228	1.7990	1.8243	1.9671	2.1295	2.1631
229	1.7993	1.8246	1.9671	2.1291	2.1626
230	1.7996	1.8249	1.9670	2.1286	2.1621
231	1.7999	1.8251	1.9670	2.1282	2.1616
232	1.8002	1.8254	1.9670	2.1278	2.1611
233	1.8005	1.8256	1.9669	2.1274	2.1607
234	1.8008	1.8259	1.9669	2.1270	2.1602

Coefficients for CIs. LoAs considered *as a pair.*

ν	$c_{t_{0.025}}$	$c_{t_{0.05}}$	$c_{t_{0.50}}$	$c_{t_{0.95}}$	$c_{t_{0.975}}$
235	1.8011	1.8262	1.9669	2.1266	2.1597
236	1.8014	1.8264	1.9668	2.1262	2.1592
237	1.8017	1.8267	1.9668	2.1258	2.1587
238	1.8020	1.8269	1.9668	2.1255	2.1583
239	1.8023	1.8272	1.9668	2.1251	2.1578
240	1.8026	1.8274	1.9667	2.1247	2.1573
241	1.8029	1.8277	1.9667	2.1243	2.1569
242	1.8032	1.8279	1.9667	2.1239	2.1564
243	1.8035	1.8282	1.9666	2.1235	2.1560
244	1.8038	1.8284	1.9666	2.1232	2.1555
245	1.8041	1.8286	1.9666	2.1228	2.1551
246	1.8043	1.8289	1.9666	2.1224	2.1546
247	1.8046	1.8291	1.9665	2.1221	2.1542
248	1.8049	1.8294	1.9665	2.1217	2.1537
249	1.8052	1.8296	1.9665	2.1213	2.1533
250	1.8055	1.8298	1.9665	2.1210	2.1529
251	1.8057	1.8301	1.9664	2.1206	2.1524
252	1.8060	1.8303	1.9664	2.1203	2.1520
253	1.8063	1.8305	1.9664	2.1199	2.1516
254	1.8066	1.8308	1.9664	2.1196	2.1512
255	1.8068	1.8310	1.9663	2.1192	2.1507
256	1.8071	1.8312	1.9663	2.1189	2.1503
257	1.8074	1.8314	1.9663	2.1185	2.1499
258	1.8076	1.8317	1.9663	2.1182	2.1495
259	1.8079	1.8319	1.9662	2.1178	2.1491
260	1.8082	1.8321	1.9662	2.1175	2.1487
261	1.8084	1.8323	1.9662	2.1172	2.1483
262	1.8087	1.8326	1.9662	2.1168	2.1479
263	1.8089	1.8328	1.9661	2.1165	2.1475
264	1.8092	1.8330	1.9661	2.1162	2.1471
265	1.8095	1.8332	1.9661	2.1158	2.1467
266	1.8097	1.8334	1.9661	2.1155	2.1463
267	1.8100	1.8336	1.9660	2.1152	2.1459
268	1.8102	1.8339	1.9660	2.1149	2.1455
269	1.8105	1.8341	1.9660	2.1146	2.1451
270	1.8107	1.8343	1.9660	2.1142	2.1448
271	1.8110	1.8345	1.9660	2.1139	2.1444
272	1.8112	1.8347	1.9659	2.1136	2.1440
273	1.8115	1.8349	1.9659	2.1133	2.1436
274	1.8117	1.8351	1.9659	2.1130	2.1432
275	1.8120	1.8353	1.9659	2.1127	2.1429
276	1.8122	1.8355	1.9659	2.1124	2.1425
277	1.8124	1.8357	1.9658	2.1121	2.1421
278	1.8127	1.8359	1.9658	2.1118	2.1418
279	1.8129	1.8361	1.9658	2.1115	2.1414
280	1.8132	1.8363	1.9658	2.1112	2.1410
281	1.8134	1.8365	1.9657	2.1109	2.1407
282	1.8136	1.8367	1.9657	2.1106	2.1403
283	1.8139	1.8369	1.9657	2.1103	2.1400
284	1.8141	1.8371	1.9657	2.1100	2.1396
285	1.8143	1.8373	1.9657	2.1097	2.1393
286	1.8146	1.8375	1.9656	2.1094	2.1389
287	1.8148	1.8377	1.9656	2.1091	2.1386
288	1.8150	1.8379	1.9656	2.1088	2.1382
289	1.8152	1.8381	1.9656	2.1085	2.1379
290	1.8155	1.8383	1.9656	2.1082	2.1375
291	1.8157	1.8385	1.9655	2.1080	2.1372
292	1.8159	1.8387	1.9655	2.1077	2.1369
293	1.8161	1.8388	1.9655	2.1074	2.1365
294	1.8164	1.8390	1.9655	2.1071	2.1362
295	1.8166	1.8392	1.9655	2.1069	2.1359
296	1.8168	1.8394	1.9655	2.1066	2.1355
297	1.8170	1.8396	1.9654	2.1063	2.1352
298	1.8172	1.8398	1.9654	2.1060	2.1349
299	1.8175	1.8400	1.9654	2.1058	2.1346
300	1.8177	1.8401	1.9654	2.1055	2.1342
301	1.8179	1.8403	1.9654	2.1052	2.1339
302	1.8181	1.8405	1.9653	2.1050	2.1336
303	1.8183	1.8407	1.9653	2.1047	2.1333
304	1.8185	1.8409	1.9653	2.1044	2.1330
305	1.8187	1.8410	1.9653	2.1042	2.1326
306	1.8189	1.8412	1.9653	2.1039	2.1323
307	1.8192	1.8414	1.9653	2.1037	2.1320
308	1.8194	1.8416	1.9652	2.1034	2.1317
309	1.8196	1.8417	1.9652	2.1031	2.1314
310	1.8198	1.8419	1.9652	2.1029	2.1311
311	1.8200	1.8421	1.9652	2.1026	2.1308
312	1.8202	1.8423	1.9652	2.1024	2.1305
313	1.8204	1.8424	1.9652	2.1021	2.1302
314	1.8206	1.8426	1.9651	2.1019	2.1299

Coefficients for CIs. LoAs considered as a pair.

ν	$c_{t_{0.025}}$	$c_{t_{0.05}}$	$c_{t_{0.50}}$	$c_{t_{0.95}}$	$c_{t_{0.975}}$
315	1.8208	1.8428	1.9651	2.1016	2.1296
316	1.8210	1.8429	1.9651	2.1014	2.1293
317	1.8212	1.8431	1.9651	2.1011	2.1290
318	1.8214	1.8433	1.9651	2.1009	2.1287
319	1.8216	1.8434	1.9651	2.1007	2.1284
320	1.8218	1.8436	1.9650	2.1004	2.1281
321	1.8220	1.8438	1.9650	2.1002	2.1278
322	1.8222	1.8439	1.9650	2.0999	2.1275
323	1.8224	1.8441	1.9650	2.0997	2.1272
324	1.8226	1.8443	1.9650	2.0995	2.1270
325	1.8228	1.8444	1.9650	2.0992	2.1267
326	1.8229	1.8446	1.9650	2.0990	2.1264
327	1.8231	1.8448	1.9649	2.0988	2.1261
328	1.8233	1.8449	1.9649	2.0985	2.1258
329	1.8235	1.8451	1.9649	2.0983	2.1256
330	1.8237	1.8452	1.9649	2.0981	2.1253
331	1.8239	1.8454	1.9649	2.0978	2.1250
332	1.8241	1.8456	1.9649	2.0976	2.1247
333	1.8243	1.8457	1.9648	2.0974	2.1245
334	1.8244	1.8459	1.9648	2.0971	2.1242
335	1.8246	1.8460	1.9648	2.0969	2.1239
336	1.8248	1.8462	1.9648	2.0967	2.1236
337	1.8250	1.8463	1.9648	2.0965	2.1234
338	1.8252	1.8465	1.9648	2.0963	2.1231
339	1.8254	1.8466	1.9648	2.0960	2.1228
340	1.8255	1.8468	1.9647	2.0958	2.1226
341	1.8257	1.8469	1.9647	2.0956	2.1223
342	1.8259	1.8471	1.9647	2.0954	2.1221
343	1.8261	1.8472	1.9647	2.0952	2.1218
344	1.8263	1.8474	1.9647	2.0949	2.1215
345	1.8264	1.8475	1.9647	2.0947	2.1213
346	1.8266	1.8477	1.9647	2.0945	2.1210
347	1.8268	1.8478	1.9647	2.0943	2.1208
348	1.8270	1.8480	1.9646	2.0941	2.1205
349	1.8271	1.8481	1.9646	2.0939	2.1203
350	1.8273	1.8483	1.9646	2.0937	2.1200
351	1.8275	1.8484	1.9646	2.0935	2.1198
352	1.8277	1.8486	1.9646	2.0933	2.1195
353	1.8278	1.8487	1.9646	2.0931	2.1193
354	1.8280	1.8489	1.9646	2.0928	2.1190
355	1.8282	1.8490	1.9645	2.0926	2.1188
356	1.8283	1.8491	1.9645	2.0924	2.1185
357	1.8285	1.8493	1.9645	2.0922	2.1183
358	1.8287	1.8494	1.9645	2.0920	2.1180
359	1.8288	1.8496	1.9645	2.0918	2.1178
360	1.8290	1.8497	1.9645	2.0916	2.1175
361	1.8292	1.8499	1.9645	2.0914	2.1173
362	1.8293	1.8500	1.9645	2.0912	2.1171
363	1.8295	1.8501	1.9644	2.0910	2.1168
364	1.8297	1.8503	1.9644	2.0908	2.1166
365	1.8298	1.8504	1.9644	2.0906	2.1164
366	1.8300	1.8505	1.9644	2.0904	2.1161
367	1.8302	1.8507	1.9644	2.0902	2.1159
368	1.8303	1.8508	1.9644	2.0901	2.1157
369	1.8305	1.8510	1.9644	2.0899	2.1154
370	1.8306	1.8511	1.9644	2.0897	2.1152
371	1.8308	1.8512	1.9644	2.0895	2.1150
372	1.8310	1.8514	1.9643	2.0893	2.1147
373	1.8311	1.8515	1.9643	2.0891	2.1145
374	1.8313	1.8516	1.9643	2.0889	2.1143
375	1.8314	1.8518	1.9643	2.0887	2.1141
376	1.8316	1.8519	1.9643	2.0885	2.1138
377	1.8317	1.8520	1.9643	2.0883	2.1136
378	1.8319	1.8522	1.9643	2.0882	2.1134
379	1.8321	1.8523	1.9643	2.0880	2.1132
380	1.8322	1.8524	1.9642	2.0878	2.1129
381	1.8324	1.8525	1.9642	2.0876	2.1127
382	1.8325	1.8527	1.9642	2.0874	2.1125
383	1.8327	1.8528	1.9642	2.0872	2.1123
384	1.8328	1.8529	1.9642	2.0871	2.1121
385	1.8330	1.8531	1.9642	2.0869	2.1118
386	1.8331	1.8532	1.9642	2.0867	2.1116
387	1.8333	1.8533	1.9642	2.0865	2.1114
388	1.8334	1.8534	1.9642	2.0864	2.1112
389	1.8336	1.8536	1.9641	2.0862	2.1110
390	1.8337	1.8537	1.9641	2.0860	2.1108
391	1.8339	1.8538	1.9641	2.0858	2.1106
392	1.8340	1.8539	1.9641	2.0856	2.1104
393	1.8342	1.8541	1.9641	2.0855	2.1101
394	1.8343	1.8542	1.9641	2.0853	2.1099

Coefficients for CIs. LoAs considered <u>as a pair.</u>

ν	$c_{t_{0.025}}$	$c_{t_{0.05}}$	$c_{t_{0.50}}$	$c_{t_{0.95}}$	$c_{t_{0.975}}$
395	1.8345	1.8543	1.9641	2.0851	2.1097
396	1.8346	1.8544	1.9641	2.0850	2.1095
397	1.8347	1.8546	1.9641	2.0848	2.1093
398	1.8349	1.8547	1.9641	2.0846	2.1091
399	1.8350	1.8548	1.9640	2.0844	2.1089
400	1.8352	1.8549	1.9640	2.0843	2.1087
401	1.8353	1.8550	1.9640	2.0841	2.1085
402	1.8355	1.8552	1.9640	2.0839	2.1083
403	1.8356	1.8553	1.9640	2.0838	2.1081
404	1.8357	1.8554	1.9640	2.0836	2.1079
405	1.8359	1.8555	1.9640	2.0834	2.1077
406	1.8360	1.8556	1.9640	2.0833	2.1075
407	1.8362	1.8558	1.9640	2.0831	2.1073
408	1.8363	1.8559	1.9640	2.0829	2.1071
409	1.8364	1.8560	1.9639	2.0828	2.1069
410	1.8366	1.8561	1.9639	2.0826	2.1067
411	1.8367	1.8562	1.9639	2.0824	2.1065
412	1.8369	1.8563	1.9639	2.0823	2.1063
413	1.8370	1.8565	1.9639	2.0821	2.1061
414	1.8371	1.8566	1.9639	2.0820	2.1059
415	1.8373	1.8567	1.9639	2.0818	2.1057
416	1.8374	1.8568	1.9639	2.0816	2.1055
417	1.8375	1.8569	1.9639	2.0815	2.1054
418	1.8377	1.8570	1.9639	2.0813	2.1052
419	1.8378	1.8571	1.9638	2.0812	2.1050
420	1.8379	1.8573	1.9638	2.0810	2.1048
421	1.8381	1.8574	1.9638	2.0809	2.1046
422	1.8382	1.8575	1.9638	2.0807	2.1044
423	1.8383	1.8576	1.9638	2.0805	2.1042
424	1.8385	1.8577	1.9638	2.0804	2.1040
425	1.8386	1.8578	1.9638	2.0802	2.1039
426	1.8387	1.8579	1.9638	2.0801	2.1037
427	1.8389	1.8580	1.9638	2.0799	2.1035
428	1.8390	1.8582	1.9638	2.0798	2.1033
429	1.8391	1.8583	1.9638	2.0796	2.1031
430	1.8393	1.8584	1.9638	2.0795	2.1029
431	1.8394	1.8585	1.9637	2.0793	2.1028
432	1.8395	1.8586	1.9637	2.0792	2.1026
433	1.8396	1.8587	1.9637	2.0790	2.1024
434	1.8398	1.8588	1.9637	2.0789	2.1022
435	1.8399	1.8589	1.9637	2.0787	2.1020
436	1.8400	1.8590	1.9637	2.0786	2.1019
437	1.8402	1.8591	1.9637	2.0784	2.1017
438	1.8403	1.8592	1.9637	2.0783	2.1015
439	1.8404	1.8593	1.9637	2.0781	2.1013
440	1.8405	1.8594	1.9637	2.0780	2.1012
441	1.8407	1.8595	1.9637	2.0779	2.1010
442	1.8408	1.8597	1.9636	2.0777	2.1008
443	1.8409	1.8598	1.9636	2.0776	2.1006
444	1.8410	1.8599	1.9636	2.0774	2.1005
445	1.8412	1.8600	1.9636	2.0773	2.1003
446	1.8413	1.8601	1.9636	2.0771	2.1001
447	1.8414	1.8602	1.9636	2.0770	2.1000
448	1.8415	1.8603	1.9636	2.0768	2.0998
449	1.8416	1.8604	1.9636	2.0767	2.0996
450	1.8418	1.8605	1.9636	2.0766	2.0994
451	1.8419	1.8606	1.9636	2.0764	2.0993
452	1.8420	1.8607	1.9636	2.0763	2.0991
453	1.8421	1.8608	1.9636	2.0761	2.0989
454	1.8422	1.8609	1.9636	2.0760	2.0988
455	1.8424	1.8610	1.9635	2.0759	2.0986
456	1.8425	1.8611	1.9635	2.0757	2.0984
457	1.8426	1.8612	1.9635	2.0756	2.0983
458	1.8427	1.8613	1.9635	2.0755	2.0981
459	1.8428	1.8614	1.9635	2.0753	2.0979
460	1.8430	1.8615	1.9635	2.0752	2.0978
461	1.8431	1.8616	1.9635	2.0751	2.0976
462	1.8432	1.8617	1.9635	2.0749	2.0975
463	1.8433	1.8618	1.9635	2.0748	2.0973
464	1.8434	1.8619	1.9635	2.0746	2.0971
465	1.8435	1.8620	1.9635	2.0745	2.0970
466	1.8437	1.8621	1.9635	2.0744	2.0968
467	1.8438	1.8622	1.9635	2.0742	2.0967
468	1.8439	1.8623	1.9634	2.0741	2.0965
469	1.8440	1.8624	1.9634	2.0740	2.0963
470	1.8441	1.8625	1.9634	2.0739	2.0962
471	1.8442	1.8626	1.9634	2.0737	2.0960
472	1.8443	1.8627	1.9634	2.0736	2.0959
473	1.8445	1.8628	1.9634	2.0735	2.0957
474	1.8446	1.8628	1.9634	2.0733	2.0956

Coefficients for CIs. LoAs considered *<u>as a pair.</u>*

ν	$c_{t_{0.025}}$	$c_{t_{0.05}}$	$c_{t_{0.50}}$	$c_{t_{0.95}}$	$c_{t_{0.975}}$
475	1.8447	1.8629	1.9634	2.0732	2.0954
476	1.8448	1.8630	1.9634	2.0731	2.0953
477	1.8449	1.8631	1.9634	2.0729	2.0951
478	1.8450	1.8632	1.9634	2.0728	2.0949
479	1.8451	1.8633	1.9634	2.0727	2.0948
480	1.8452	1.8634	1.9634	2.0726	2.0946
481	1.8453	1.8635	1.9634	2.0724	2.0945
482	1.8455	1.8636	1.9633	2.0723	2.0943
483	1.8456	1.8637	1.9633	2.0722	2.0942
484	1.8457	1.8638	1.9633	2.0721	2.0940
485	1.8458	1.8639	1.9633	2.0719	2.0939
486	1.8459	1.8640	1.9633	2.0718	2.0937
487	1.8460	1.8641	1.9633	2.0717	2.0936
488	1.8461	1.8641	1.9633	2.0716	2.0934
489	1.8462	1.8642	1.9633	2.0714	2.0933
490	1.8463	1.8643	1.9633	2.0713	2.0931
491	1.8464	1.8644	1.9633	2.0712	2.0930
492	1.8465	1.8645	1.9633	2.0711	2.0928
493	1.8466	1.8646	1.9633	2.0710	2.0927
494	1.8468	1.8647	1.9633	2.0708	2.0926
495	1.8469	1.8648	1.9633	2.0707	2.0924
496	1.8470	1.8649	1.9632	2.0706	2.0923
497	1.8471	1.8650	1.9632	2.0705	2.0921
498	1.8472	1.8650	1.9632	2.0703	2.0920
499	1.8473	1.8651	1.9632	2.0702	2.0918
500	1.8474	1.8652	1.9632	2.0701	2.0917
501	1.8475	1.8653	1.9632	2.0700	2.0915
502	1.8476	1.8654	1.9632	2.0699	2.0914
503	1.8477	1.8655	1.9632	2.0698	2.0913
504	1.8478	1.8656	1.9632	2.0696	2.0911
505	1.8479	1.8657	1.9632	2.0695	2.0910
506	1.8480	1.8657	1.9632	2.0694	2.0908
507	1.8481	1.8658	1.9632	2.0693	2.0907
508	1.8482	1.8659	1.9632	2.0692	2.0906
509	1.8483	1.8660	1.9632	2.0691	2.0904
510	1.8484	1.8661	1.9632	2.0689	2.0903
511	1.8485	1.8662	1.9632	2.0688	2.0901
512	1.8486	1.8663	1.9631	2.0687	2.0900
513	1.8487	1.8663	1.9631	2.0686	2.0899
514	1.8488	1.8664	1.9631	2.0685	2.0897
515	1.8489	1.8665	1.9631	2.0684	2.0896
516	1.8490	1.8666	1.9631	2.0683	2.0895
517	1.8491	1.8667	1.9631	2.0681	2.0893
518	1.8492	1.8668	1.9631	2.0680	2.0892
519	1.8493	1.8669	1.9631	2.0679	2.0891
520	1.8494	1.8669	1.9631	2.0678	2.0889
521	1.8495	1.8670	1.9631	2.0677	2.0888
522	1.8496	1.8671	1.9631	2.0676	2.0887
523	1.8497	1.8672	1.9631	2.0675	2.0885
524	1.8498	1.8673	1.9631	2.0674	2.0884
525	1.8499	1.8673	1.9631	2.0673	2.0883
526	1.8500	1.8674	1.9631	2.0671	2.0881
527	1.8501	1.8675	1.9631	2.0670	2.0880
528	1.8502	1.8676	1.9630	2.0669	2.0879
529	1.8503	1.8677	1.9630	2.0668	2.0877
530	1.8504	1.8678	1.9630	2.0667	2.0876
531	1.8505	1.8678	1.9630	2.0666	2.0875
532	1.8506	1.8679	1.9630	2.0665	2.0873
533	1.8507	1.8680	1.9630	2.0664	2.0872
534	1.8508	1.8681	1.9630	2.0663	2.0871
535	1.8509	1.8682	1.9630	2.0662	2.0870
536	1.8510	1.8682	1.9630	2.0661	2.0868
537	1.8510	1.8683	1.9630	2.0660	2.0867
538	1.8511	1.8684	1.9630	2.0658	2.0866
539	1.8512	1.8685	1.9630	2.0657	2.0864
540	1.8513	1.8686	1.9630	2.0656	2.0863
541	1.8514	1.8686	1.9630	2.0655	2.0862
542	1.8515	1.8687	1.9630	2.0654	2.0861
543	1.8516	1.8688	1.9630	2.0653	2.0859
544	1.8517	1.8689	1.9630	2.0652	2.0858
545	1.8518	1.8689	1.9630	2.0651	2.0857
546	1.8519	1.8690	1.9629	2.0650	2.0856
547	1.8520	1.8691	1.9629	2.0649	2.0854
548	1.8521	1.8692	1.9629	2.0648	2.0853
549	1.8522	1.8693	1.9629	2.0647	2.0852
550	1.8523	1.8693	1.9629	2.0646	2.0851
551	1.8523	1.8694	1.9629	2.0645	2.0850
552	1.8524	1.8695	1.9629	2.0644	2.0848
553	1.8525	1.8696	1.9629	2.0643	2.0847
554	1.8526	1.8696	1.9629	2.0642	2.0846

Coefficients for CIs. LoAs considered as a pair.

ν	$c_{t_{0.025}}$	$c_{t_{0.05}}$	$c_{t_{0.50}}$	$c_{t_{0.95}}$	$c_{t_{0.975}}$
555	1.8527	1.8697	1.9629	2.0641	2.0845
556	1.8528	1.8698	1.9629	2.0640	2.0843
557	1.8529	1.8699	1.9629	2.0639	2.0842
558	1.8530	1.8699	1.9629	2.0638	2.0841
559	1.8531	1.8700	1.9629	2.0637	2.0840
560	1.8532	1.8701	1.9629	2.0636	2.0839
561	1.8532	1.8702	1.9629	2.0635	2.0837
562	1.8533	1.8702	1.9629	2.0634	2.0836
563	1.8534	1.8703	1.9629	2.0633	2.0835
564	1.8535	1.8704	1.9629	2.0632	2.0834
565	1.8536	1.8705	1.9628	2.0631	2.0833
566	1.8537	1.8705	1.9628	2.0630	2.0832
567	1.8538	1.8706	1.9628	2.0629	2.0830
568	1.8539	1.8707	1.9628	2.0628	2.0829
569	1.8539	1.8708	1.9628	2.0627	2.0828
570	1.8540	1.8708	1.9628	2.0626	2.0827
571	1.8541	1.8709	1.9628	2.0625	2.0826
572	1.8542	1.8710	1.9628	2.0624	2.0825
573	1.8543	1.8710	1.9628	2.0623	2.0823
574	1.8544	1.8711	1.9628	2.0622	2.0822
575	1.8545	1.8712	1.9628	2.0621	2.0821
576	1.8545	1.8713	1.9628	2.0620	2.0820
577	1.8546	1.8713	1.9628	2.0619	2.0819
578	1.8547	1.8714	1.9628	2.0618	2.0818
579	1.8548	1.8715	1.9628	2.0617	2.0817
580	1.8549	1.8715	1.9628	2.0617	2.0815
581	1.8550	1.8716	1.9628	2.0616	2.0814
582	1.8551	1.8717	1.9628	2.0615	2.0813
583	1.8551	1.8718	1.9628	2.0614	2.0812
584	1.8552	1.8718	1.9628	2.0613	2.0811
585	1.8553	1.8719	1.9627	2.0612	2.0810
586	1.8554	1.8720	1.9627	2.0611	2.0809
587	1.8555	1.8720	1.9627	2.0610	2.0808
588	1.8556	1.8721	1.9627	2.0609	2.0806
589	1.8556	1.8722	1.9627	2.0608	2.0805
590	1.8557	1.8723	1.9627	2.0607	2.0804
591	1.8558	1.8723	1.9627	2.0606	2.0803
592	1.8559	1.8724	1.9627	2.0605	2.0802
593	1.8560	1.8725	1.9627	2.0605	2.0801
594	1.8560	1.8725	1.9627	2.0604	2.0800
595	1.8561	1.8726	1.9627	2.0603	2.0799
596	1.8562	1.8727	1.9627	2.0602	2.0798
597	1.8563	1.8727	1.9627	2.0601	2.0797
598	1.8564	1.8728	1.9627	2.0600	2.0796
599	1.8564	1.8729	1.9627	2.0599	2.0795
600	1.8565	1.8729	1.9627	2.0598	2.0793
601	1.8566	1.8730	1.9627	2.0597	2.0792
602	1.8567	1.8731	1.9627	2.0596	2.0791
603	1.8568	1.8731	1.9627	2.0596	2.0790
604	1.8568	1.8732	1.9627	2.0595	2.0789
605	1.8569	1.8733	1.9627	2.0594	2.0788
606	1.8570	1.8733	1.9627	2.0593	2.0787
607	1.8571	1.8734	1.9626	2.0592	2.0786
608	1.8572	1.8735	1.9626	2.0591	2.0785
609	1.8572	1.8735	1.9626	2.0590	2.0784
610	1.8573	1.8736	1.9626	2.0589	2.0783
611	1.8574	1.8737	1.9626	2.0589	2.0782
612	1.8575	1.8737	1.9626	2.0588	2.0781
613	1.8576	1.8738	1.9626	2.0587	2.0780
614	1.8576	1.8739	1.9626	2.0586	2.0779
615	1.8577	1.8739	1.9626	2.0585	2.0778
616	1.8578	1.8740	1.9626	2.0584	2.0777
617	1.8579	1.8741	1.9626	2.0583	2.0776
618	1.8579	1.8741	1.9626	2.0583	2.0775
619	1.8580	1.8742	1.9626	2.0582	2.0774
620	1.8581	1.8743	1.9626	2.0581	2.0773
621	1.8582	1.8743	1.9626	2.0580	2.0772
622	1.8583	1.8744	1.9626	2.0579	2.0771
623	1.8583	1.8745	1.9626	2.0578	2.0770
624	1.8584	1.8745	1.9626	2.0577	2.0769
625	1.8585	1.8746	1.9626	2.0577	2.0768
626	1.8586	1.8746	1.9626	2.0576	2.0767
627	1.8586	1.8747	1.9626	2.0575	2.0766
628	1.8587	1.8748	1.9626	2.0574	2.0765
629	1.8588	1.8748	1.9626	2.0573	2.0764
630	1.8589	1.8749	1.9626	2.0572	2.0763
631	1.8589	1.8750	1.9625	2.0572	2.0762
632	1.8590	1.8750	1.9625	2.0571	2.0761
633	1.8591	1.8751	1.9625	2.0570	2.0760
634	1.8592	1.8752	1.9625	2.0569	2.0759

Coefficients for CIs. LoAs considered as a pair.

ν	$c_{t_{0.025}}$	$c_{t_{0.05}}$	$c_{t_{0.50}}$	$c_{t_{0.95}}$	$c_{t_{0.975}}$
635	1.8592	1.8752	1.9625	2.0568	2.0758
636	1.8593	1.8753	1.9625	2.0568	2.0757
637	1.8594	1.8753	1.9625	2.0567	2.0756
638	1.8595	1.8754	1.9625	2.0566	2.0755
639	1.8595	1.8755	1.9625	2.0565	2.0754
640	1.8596	1.8755	1.9625	2.0564	2.0753
641	1.8597	1.8756	1.9625	2.0564	2.0752
642	1.8597	1.8756	1.9625	2.0563	2.0751
643	1.8598	1.8757	1.9625	2.0562	2.0750
644	1.8599	1.8758	1.9625	2.0561	2.0749
645	1.8600	1.8758	1.9625	2.0560	2.0748
646	1.8600	1.8759	1.9625	2.0560	2.0747
647	1.8601	1.8760	1.9625	2.0559	2.0746
648	1.8602	1.8760	1.9625	2.0558	2.0745
649	1.8603	1.8761	1.9625	2.0557	2.0744
650	1.8603	1.8761	1.9625	2.0556	2.0743
651	1.8604	1.8762	1.9625	2.0556	2.0742
652	1.8605	1.8763	1.9625	2.0555	2.0741
653	1.8605	1.8763	1.9625	2.0554	2.0740
654	1.8606	1.8764	1.9625	2.0553	2.0739
655	1.8607	1.8764	1.9625	2.0552	2.0739
656	1.8607	1.8765	1.9624	2.0552	2.0738
657	1.8608	1.8766	1.9624	2.0551	2.0737
658	1.8609	1.8766	1.9624	2.0550	2.0736
659	1.8610	1.8767	1.9624	2.0549	2.0735
660	1.8610	1.8767	1.9624	2.0549	2.0734
661	1.8611	1.8768	1.9624	2.0548	2.0733
662	1.8612	1.8769	1.9624	2.0547	2.0732
663	1.8612	1.8769	1.9624	2.0546	2.0731
664	1.8613	1.8770	1.9624	2.0546	2.0730
665	1.8614	1.8770	1.9624	2.0545	2.0729
666	1.8614	1.8771	1.9624	2.0544	2.0728
667	1.8615	1.8771	1.9624	2.0543	2.0727
668	1.8616	1.8772	1.9624	2.0542	2.0727
669	1.8617	1.8773	1.9624	2.0542	2.0726
670	1.8617	1.8773	1.9624	2.0541	2.0725
671	1.8618	1.8774	1.9624	2.0540	2.0724
672	1.8619	1.8774	1.9624	2.0539	2.0723
673	1.8619	1.8775	1.9624	2.0539	2.0722
674	1.8620	1.8776	1.9624	2.0538	2.0721
675	1.8621	1.8776	1.9624	2.0537	2.0720
676	1.8621	1.8777	1.9624	2.0537	2.0719
677	1.8622	1.8777	1.9624	2.0536	2.0719
678	1.8623	1.8778	1.9624	2.0535	2.0718
679	1.8623	1.8778	1.9624	2.0534	2.0717
680	1.8624	1.8779	1.9624	2.0534	2.0716
681	1.8625	1.8779	1.9624	2.0533	2.0715
682	1.8625	1.8780	1.9624	2.0532	2.0714
683	1.8626	1.8781	1.9624	2.0531	2.0713
684	1.8627	1.8781	1.9623	2.0531	2.0712
685	1.8627	1.8782	1.9623	2.0530	2.0712
686	1.8628	1.8782	1.9623	2.0529	2.0711
687	1.8629	1.8783	1.9623	2.0528	2.0710
688	1.8629	1.8783	1.9623	2.0528	2.0709
689	1.8630	1.8784	1.9623	2.0527	2.0708
690	1.8631	1.8785	1.9623	2.0526	2.0707
691	1.8631	1.8785	1.9623	2.0526	2.0706
692	1.8632	1.8786	1.9623	2.0525	2.0705
693	1.8633	1.8786	1.9623	2.0524	2.0705
694	1.8633	1.8787	1.9623	2.0523	2.0704
695	1.8634	1.8787	1.9623	2.0523	2.0703
696	1.8635	1.8788	1.9623	2.0522	2.0702
697	1.8635	1.8788	1.9623	2.0521	2.0701
698	1.8636	1.8789	1.9623	2.0521	2.0700
699	1.8637	1.8789	1.9623	2.0520	2.0700
700	1.8637	1.8790	1.9623	2.0519	2.0699
701	1.8638	1.8791	1.9623	2.0519	2.0698
702	1.8638	1.8791	1.9623	2.0518	2.0697
703	1.8639	1.8792	1.9623	2.0517	2.0696
704	1.8640	1.8792	1.9623	2.0516	2.0695
705	1.8640	1.8793	1.9623	2.0516	2.0695
706	1.8641	1.8793	1.9623	2.0515	2.0694
707	1.8642	1.8794	1.9623	2.0514	2.0693
708	1.8642	1.8794	1.9623	2.0514	2.0692
709	1.8643	1.8795	1.9623	2.0513	2.0691
710	1.8644	1.8795	1.9623	2.0512	2.0690
711	1.8644	1.8796	1.9623	2.0512	2.0690
712	1.8645	1.8796	1.9623	2.0511	2.0689
713	1.8645	1.8797	1.9623	2.0510	2.0688
714	1.8646	1.8798	1.9622	2.0510	2.0687

Coefficients for CIs. LoAs considered as a pair.

ν	$c_{t_{0.025}}$	$c_{t_{0.05}}$	$c_{t_{0.50}}$	$c_{t_{0.95}}$	$c_{t_{0.975}}$
715	1.8647	1.8798	1.9622	2.0509	2.0686
716	1.8647	1.8799	1.9622	2.0508	2.0686
717	1.8648	1.8799	1.9622	2.0508	2.0685
718	1.8649	1.8800	1.9622	2.0507	2.0684
719	1.8649	1.8800	1.9622	2.0506	2.0683
720	1.8650	1.8801	1.9622	2.0506	2.0682
721	1.8650	1.8801	1.9622	2.0505	2.0681
722	1.8651	1.8802	1.9622	2.0504	2.0681
723	1.8652	1.8802	1.9622	2.0504	2.0680
724	1.8652	1.8803	1.9622	2.0503	2.0679
725	1.8653	1.8803	1.9622	2.0502	2.0678
726	1.8654	1.8804	1.9622	2.0502	2.0677
727	1.8654	1.8804	1.9622	2.0501	2.0677
728	1.8655	1.8805	1.9622	2.0500	2.0676
729	1.8655	1.8805	1.9622	2.0500	2.0675
730	1.8656	1.8806	1.9622	2.0499	2.0674
731	1.8657	1.8806	1.9622	2.0498	2.0674
732	1.8657	1.8807	1.9622	2.0498	2.0673
733	1.8658	1.8807	1.9622	2.0497	2.0672
734	1.8658	1.8808	1.9622	2.0496	2.0671
735	1.8659	1.8808	1.9622	2.0496	2.0670
736	1.8660	1.8809	1.9622	2.0495	2.0670
737	1.8660	1.8809	1.9622	2.0494	2.0669
738	1.8661	1.8810	1.9622	2.0494	2.0668
739	1.8661	1.8810	1.9622	2.0493	2.0667
740	1.8662	1.8811	1.9622	2.0492	2.0667
741	1.8663	1.8811	1.9622	2.0492	2.0666
742	1.8663	1.8812	1.9622	2.0491	2.0665
743	1.8664	1.8812	1.9622	2.0490	2.0664
744	1.8664	1.8813	1.9622	2.0490	2.0663
745	1.8665	1.8813	1.9622	2.0489	2.0663
746	1.8666	1.8814	1.9621	2.0489	2.0662
747	1.8666	1.8814	1.9621	2.0488	2.0661
748	1.8667	1.8815	1.9621	2.0487	2.0660
749	1.8667	1.8815	1.9621	2.0487	2.0660
750	1.8668	1.8816	1.9621	2.0486	2.0659
751	1.8668	1.8816	1.9621	2.0485	2.0658
752	1.8669	1.8817	1.9621	2.0485	2.0657
753	1.8670	1.8817	1.9621	2.0484	2.0657
754	1.8670	1.8818	1.9621	2.0484	2.0656
755	1.8671	1.8818	1.9621	2.0483	2.0655
756	1.8671	1.8819	1.9621	2.0482	2.0654
757	1.8672	1.8819	1.9621	2.0482	2.0654
758	1.8672	1.8820	1.9621	2.0481	2.0653
759	1.8673	1.8820	1.9621	2.0480	2.0652
760	1.8674	1.8821	1.9621	2.0480	2.0651
761	1.8674	1.8821	1.9621	2.0479	2.0651
762	1.8675	1.8822	1.9621	2.0479	2.0650
763	1.8675	1.8822	1.9621	2.0478	2.0649
764	1.8676	1.8823	1.9621	2.0477	2.0649
765	1.8676	1.8823	1.9621	2.0477	2.0648
766	1.8677	1.8824	1.9621	2.0476	2.0647
767	1.8678	1.8824	1.9621	2.0476	2.0646
768	1.8678	1.8825	1.9621	2.0475	2.0646
769	1.8679	1.8825	1.9621	2.0474	2.0645
770	1.8679	1.8826	1.9621	2.0474	2.0644
771	1.8680	1.8826	1.9621	2.0473	2.0643
772	1.8680	1.8826	1.9621	2.0473	2.0643
773	1.8681	1.8827	1.9621	2.0472	2.0642
774	1.8682	1.8827	1.9621	2.0471	2.0641
775	1.8682	1.8828	1.9621	2.0471	2.0641
776	1.8683	1.8828	1.9621	2.0470	2.0640
777	1.8683	1.8829	1.9621	2.0470	2.0639
778	1.8684	1.8829	1.9621	2.0469	2.0638
779	1.8684	1.8830	1.9621	2.0468	2.0638
780	1.8685	1.8830	1.9621	2.0468	2.0637
781	1.8685	1.8831	1.9621	2.0467	2.0636
782	1.8686	1.8831	1.9620	2.0467	2.0636
783	1.8687	1.8832	1.9620	2.0466	2.0635
784	1.8687	1.8832	1.9620	2.0465	2.0634
785	1.8688	1.8833	1.9620	2.0465	2.0633
786	1.8688	1.8833	1.9620	2.0464	2.0633
787	1.8689	1.8833	1.9620	2.0464	2.0632
788	1.8689	1.8834	1.9620	2.0463	2.0631
789	1.8690	1.8834	1.9620	2.0462	2.0631
790	1.8690	1.8835	1.9620	2.0462	2.0630
791	1.8691	1.8835	1.9620	2.0461	2.0629
792	1.8691	1.8836	1.9620	2.0461	2.0629
793	1.8692	1.8836	1.9620	2.0460	2.0628
794	1.8692	1.8837	1.9620	2.0460	2.0627

Coefficients for CIs. LoAs considered <u>as a pair.</u>

ν	$c_{t_{0.025}}$	$c_{t_{0.05}}$	$c_{t_{0.50}}$	$c_{t_{0.95}}$	$c_{t_{0.975}}$
795	1.8693	1.8837	1.9620	2.0459	2.0627
796	1.8694	1.8838	1.9620	2.0458	2.0626
797	1.8694	1.8838	1.9620	2.0458	2.0625
798	1.8695	1.8838	1.9620	2.0457	2.0624
799	1.8695	1.8839	1.9620	2.0457	2.0624
800	1.8696	1.8839	1.9620	2.0456	2.0623
801	1.8696	1.8840	1.9620	2.0456	2.0622
802	1.8697	1.8840	1.9620	2.0455	2.0622
803	1.8697	1.8841	1.9620	2.0454	2.0621
804	1.8698	1.8841	1.9620	2.0454	2.0620
805	1.8698	1.8842	1.9620	2.0453	2.0620
806	1.8699	1.8842	1.9620	2.0453	2.0619
807	1.8699	1.8842	1.9620	2.0452	2.0618
808	1.8700	1.8843	1.9620	2.0452	2.0618
809	1.8700	1.8843	1.9620	2.0451	2.0617
810	1.8701	1.8844	1.9620	2.0451	2.0616
811	1.8701	1.8844	1.9620	2.0450	2.0616
812	1.8702	1.8845	1.9620	2.0449	2.0615
813	1.8703	1.8845	1.9620	2.0449	2.0614
814	1.8703	1.8846	1.9620	2.0448	2.0614
815	1.8704	1.8846	1.9620	2.0448	2.0613
816	1.8704	1.8846	1.9620	2.0447	2.0612
817	1.8705	1.8847	1.9620	2.0447	2.0612
818	1.8705	1.8847	1.9620	2.0446	2.0611
819	1.8706	1.8848	1.9620	2.0446	2.0610
820	1.8706	1.8848	1.9620	2.0445	2.0610
821	1.8707	1.8849	1.9620	2.0444	2.0609
822	1.8707	1.8849	1.9619	2.0444	2.0608
823	1.8708	1.8849	1.9619	2.0443	2.0608
824	1.8708	1.8850	1.9619	2.0443	2.0607
825	1.8709	1.8850	1.9619	2.0442	2.0606
826	1.8709	1.8851	1.9619	2.0442	2.0606
827	1.8710	1.8851	1.9619	2.0441	2.0605
828	1.8710	1.8852	1.9619	2.0441	2.0605
829	1.8711	1.8852	1.9619	2.0440	2.0604
830	1.8711	1.8852	1.9619	2.0440	2.0603
831	1.8712	1.8853	1.9619	2.0439	2.0603
832	1.8712	1.8853	1.9619	2.0439	2.0602
833	1.8713	1.8854	1.9619	2.0438	2.0601
834	1.8713	1.8854	1.9619	2.0437	2.0601
835	1.8714	1.8855	1.9619	2.0437	2.0600
836	1.8714	1.8855	1.9619	2.0436	2.0599
837	1.8715	1.8855	1.9619	2.0436	2.0599
838	1.8715	1.8856	1.9619	2.0435	2.0598
839	1.8716	1.8856	1.9619	2.0435	2.0597
840	1.8716	1.8857	1.9619	2.0434	2.0597
841	1.8717	1.8857	1.9619	2.0434	2.0596
842	1.8717	1.8857	1.9619	2.0433	2.0596
843	1.8718	1.8858	1.9619	2.0433	2.0595
844	1.8718	1.8858	1.9619	2.0432	2.0594
845	1.8719	1.8859	1.9619	2.0432	2.0594
846	1.8719	1.8859	1.9619	2.0431	2.0593
847	1.8720	1.8860	1.9619	2.0431	2.0592
848	1.8720	1.8860	1.9619	2.0430	2.0592
849	1.8721	1.8860	1.9619	2.0430	2.0591
850	1.8721	1.8861	1.9619	2.0429	2.0591
851	1.8722	1.8861	1.9619	2.0429	2.0590
852	1.8722	1.8862	1.9619	2.0428	2.0589
853	1.8723	1.8862	1.9619	2.0427	2.0589
854	1.8723	1.8862	1.9619	2.0427	2.0588
855	1.8724	1.8863	1.9619	2.0426	2.0588
856	1.8724	1.8863	1.9619	2.0426	2.0587
857	1.8725	1.8864	1.9619	2.0425	2.0586
858	1.8725	1.8864	1.9619	2.0425	2.0586
859	1.8725	1.8864	1.9619	2.0424	2.0585
860	1.8726	1.8865	1.9619	2.0424	2.0584
861	1.8726	1.8865	1.9619	2.0423	2.0584
862	1.8727	1.8866	1.9619	2.0423	2.0583
863	1.8727	1.8866	1.9619	2.0422	2.0583
864	1.8728	1.8866	1.9619	2.0422	2.0582
865	1.8728	1.8867	1.9618	2.0421	2.0581
866	1.8729	1.8867	1.9618	2.0421	2.0581
867	1.8729	1.8868	1.9618	2.0420	2.0580
868	1.8730	1.8868	1.9618	2.0420	2.0580
869	1.8730	1.8868	1.9618	2.0419	2.0579
870	1.8731	1.8869	1.9618	2.0419	2.0578
871	1.8731	1.8869	1.9618	2.0418	2.0578
872	1.8732	1.8870	1.9618	2.0418	2.0577
873	1.8732	1.8870	1.9618	2.0417	2.0577
874	1.8733	1.8870	1.9618	2.0417	2.0576

Coefficients for CIs. LoAs considered <u>*as a pair.*</u>

ν	$c_{t_{0.025}}$	$c_{t_{0.05}}$	$c_{t_{0.50}}$	$c_{t_{0.95}}$	$c_{t_{0.975}}$
875	1.8733	1.8871	1.9618	2.0416	2.0575
876	1.8734	1.8871	1.9618	2.0416	2.0575
877	1.8734	1.8872	1.9618	2.0415	2.0574
878	1.8734	1.8872	1.9618	2.0415	2.0574
879	1.8735	1.8872	1.9618	2.0414	2.0573
880	1.8735	1.8873	1.9618	2.0414	2.0573
881	1.8736	1.8873	1.9618	2.0413	2.0572
882	1.8736	1.8874	1.9618	2.0413	2.0571
883	1.8737	1.8874	1.9618	2.0412	2.0571
884	1.8737	1.8874	1.9618	2.0412	2.0570
885	1.8738	1.8875	1.9618	2.0412	2.0570
886	1.8738	1.8875	1.9618	2.0411	2.0569
887	1.8739	1.8875	1.9618	2.0411	2.0568
888	1.8739	1.8876	1.9618	2.0410	2.0568
889	1.8740	1.8876	1.9618	2.0410	2.0567
890	1.8740	1.8877	1.9618	2.0409	2.0567
891	1.8740	1.8877	1.9618	2.0409	2.0566
892	1.8741	1.8877	1.9618	2.0408	2.0566
893	1.8741	1.8878	1.9618	2.0408	2.0565
894	1.8742	1.8878	1.9618	2.0407	2.0564
895	1.8742	1.8879	1.9618	2.0407	2.0564
896	1.8743	1.8879	1.9618	2.0406	2.0563
897	1.8743	1.8879	1.9618	2.0406	2.0563
898	1.8744	1.8880	1.9618	2.0405	2.0562
899	1.8744	1.8880	1.9618	2.0405	2.0562
900	1.8745	1.8880	1.9618	2.0404	2.0561
901	1.8745	1.8881	1.9618	2.0404	2.0560
902	1.8745	1.8881	1.9618	2.0403	2.0560
903	1.8746	1.8882	1.9618	2.0403	2.0559
904	1.8746	1.8882	1.9618	2.0402	2.0559
905	1.8747	1.8882	1.9618	2.0402	2.0558
906	1.8747	1.8883	1.9618	2.0401	2.0558
907	1.8748	1.8883	1.9618	2.0401	2.0557
908	1.8748	1.8883	1.9618	2.0401	2.0556
909	1.8749	1.8884	1.9618	2.0400	2.0556
910	1.8749	1.8884	1.9618	2.0400	2.0555
911	1.8749	1.8885	1.9618	2.0399	2.0555
912	1.8750	1.8885	1.9618	2.0399	2.0554
913	1.8750	1.8885	1.9618	2.0398	2.0554
914	1.8751	1.8886	1.9617	2.0398	2.0553
915	1.8751	1.8886	1.9617	2.0397	2.0553
916	1.8752	1.8886	1.9617	2.0397	2.0552
917	1.8752	1.8887	1.9617	2.0396	2.0551
918	1.8752	1.8887	1.9617	2.0396	2.0551
919	1.8753	1.8888	1.9617	2.0395	2.0550
920	1.8753	1.8888	1.9617	2.0395	2.0550
921	1.8754	1.8888	1.9617	2.0395	2.0549
922	1.8754	1.8889	1.9617	2.0394	2.0549
923	1.8755	1.8889	1.9617	2.0394	2.0548
924	1.8755	1.8889	1.9617	2.0393	2.0548
925	1.8755	1.8890	1.9617	2.0393	2.0547
926	1.8756	1.8890	1.9617	2.0392	2.0547
927	1.8756	1.8890	1.9617	2.0392	2.0546
928	1.8757	1.8891	1.9617	2.0391	2.0545
929	1.8757	1.8891	1.9617	2.0391	2.0545
930	1.8758	1.8892	1.9617	2.0390	2.0544
931	1.8758	1.8892	1.9617	2.0390	2.0544
932	1.8758	1.8892	1.9617	2.0390	2.0543
933	1.8759	1.8893	1.9617	2.0389	2.0543
934	1.8759	1.8893	1.9617	2.0389	2.0542
935	1.8760	1.8893	1.9617	2.0388	2.0542
936	1.8760	1.8894	1.9617	2.0388	2.0541
937	1.8761	1.8894	1.9617	2.0387	2.0541
938	1.8761	1.8894	1.9617	2.0387	2.0540
939	1.8761	1.8895	1.9617	2.0386	2.0540
940	1.8762	1.8895	1.9617	2.0386	2.0539
941	1.8762	1.8895	1.9617	2.0386	2.0539
942	1.8763	1.8896	1.9617	2.0385	2.0538
943	1.8763	1.8896	1.9617	2.0385	2.0537
944	1.8764	1.8897	1.9617	2.0384	2.0537
945	1.8764	1.8897	1.9617	2.0384	2.0536
946	1.8764	1.8897	1.9617	2.0383	2.0536
947	1.8765	1.8898	1.9617	2.0383	2.0535
948	1.8765	1.8898	1.9617	2.0383	2.0535
949	1.8766	1.8898	1.9617	2.0382	2.0534
950	1.8766	1.8899	1.9617	2.0382	2.0534
951	1.8766	1.8899	1.9617	2.0381	2.0533
952	1.8767	1.8899	1.9617	2.0381	2.0533
953	1.8767	1.8900	1.9617	2.0380	2.0532
954	1.8768	1.8900	1.9617	2.0380	2.0532

Coefficients for CIs. LoAs considered ***as a pair.***

ν	$c_{t_{0.025}}$	$c_{t_{0.05}}$	$c_{t_{0.50}}$	$c_{t_{0.95}}$	$c_{t_{0.975}}$
955	1.8768	1.8900	1.9617	2.0379	2.0531
956	1.8769	1.8901	1.9617	2.0379	2.0531
957	1.8769	1.8901	1.9617	2.0379	2.0530
958	1.8769	1.8901	1.9617	2.0378	2.0530
959	1.8770	1.8902	1.9617	2.0378	2.0529
960	1.8770	1.8902	1.9617	2.0377	2.0529
961	1.8771	1.8902	1.9617	2.0377	2.0528
962	1.8771	1.8903	1.9617	2.0376	2.0528
963	1.8771	1.8903	1.9617	2.0376	2.0527
964	1.8772	1.8903	1.9617	2.0376	2.0527
965	1.8772	1.8904	1.9617	2.0375	2.0526
966	1.8773	1.8904	1.9617	2.0375	2.0526
967	1.8773	1.8905	1.9617	2.0374	2.0525
968	1.8773	1.8905	1.9616	2.0374	2.0525
969	1.8774	1.8905	1.9616	2.0373	2.0524
970	1.8774	1.8906	1.9616	2.0373	2.0524
971	1.8775	1.8906	1.9616	2.0373	2.0523
972	1.8775	1.8906	1.9616	2.0372	2.0523
973	1.8775	1.8907	1.9616	2.0372	2.0522
974	1.8776	1.8907	1.9616	2.0371	2.0522
975	1.8776	1.8907	1.9616	2.0371	2.0521
976	1.8777	1.8908	1.9616	2.0371	2.0521
977	1.8777	1.8908	1.9616	2.0370	2.0520
978	1.8777	1.8908	1.9616	2.0370	2.0520
979	1.8778	1.8909	1.9616	2.0369	2.0519
980	1.8778	1.8909	1.9616	2.0369	2.0519
981	1.8779	1.8909	1.9616	2.0368	2.0518
982	1.8779	1.8910	1.9616	2.0368	2.0518
983	1.8779	1.8910	1.9616	2.0368	2.0517
984	1.8780	1.8910	1.9616	2.0367	2.0517
985	1.8780	1.8911	1.9616	2.0367	2.0516
986	1.8781	1.8911	1.9616	2.0366	2.0516
987	1.8781	1.8911	1.9616	2.0366	2.0515
988	1.8781	1.8912	1.9616	2.0366	2.0515
989	1.8782	1.8912	1.9616	2.0365	2.0514
990	1.8782	1.8912	1.9616	2.0365	2.0514
991	1.8783	1.8913	1.9616	2.0364	2.0513
992	1.8783	1.8913	1.9616	2.0364	2.0513
993	1.8783	1.8913	1.9616	2.0364	2.0512
994	1.8784	1.8914	1.9616	2.0363	2.0512
995	1.8784	1.8914	1.9616	2.0363	2.0511
996	1.8785	1.8914	1.9616	2.0362	2.0511
997	1.8785	1.8915	1.9616	2.0362	2.0510
998	1.8785	1.8915	1.9616	2.0362	2.0510
999	1.8786	1.8915	1.9616	2.0361	2.0509
1000	1.8786	1.8915	1.9616	2.0361	2.0509

```
p=0.95;
format long
prompt = 'How many pairs in sample? ';
N = input(prompt);

prompt ='Area of left tail in confidence interval? (e.g. 0.975)';
gamma= input(prompt);
Degf=N-1;
disp(' Wait. This could take seconds to minutes.')
gammaest=0;
Kest=0;
Kstep=4;
DirectK=+1;

while abs(gammaest-gamma)> 1E-8
Kest=Kest+Kstep;
K=Kest;
stepper=0.05/N;
toprange=8/(N^0.5)+stepper;
xdist=[0:stepper:toprange];
boxes=length(xdist);
boxes=round(boxes/2+.1)*2-1;
Prchi =zeros(1,boxes);
Combpdf= zeros(1,boxes);

halfgauss=exp(-(N/2)*xdist.^2);
shrinkfactor=2*(N/(2*pi))^.5;

for s=1:boxes
xtest=xdist(s);
startp =(0.5+p/2);
resti= norminv(startp,0,1)+xtest-.1;
restiprior=resti;
phigh=normcdf(xtest+resti);
plow=normcdf(xtest-resti);
pesti=phigh-plow;
pestiprior=pesti;

 perror=pesti-p;
resti= resti+.11;
phigh=normcdf(xtest+resti);
plow=normcdf(xtest-resti);
pesti=phigh-plow;
perror=pesti-p;

deltap=pesti-pestiprior;
deltaresti= resti- restiprior;
newresti=resti-perror/deltap* deltaresti;
restiprior= resti;
resti= newresti;
pestiprior=pesti;
phigh=normcdf(xtest+resti);
plow=normcdf(xtest-resti);
pesti=phigh-plow;
perror=pesti-p;


while abs( perror)>2e-15;
```

```
deltap=pesti-pestiprior;
deltaresti= resti- restiprior;
newresti=resti-perror/deltap* deltaresti;
restiprior= resti;
resti= newresti;
pestiprior=pesti;
phigh=normcdf(xtest+resti);
plow=normcdf(xtest-resti);
pesti=phigh-plow;
perror=pesti-p;
end

chiprob=1-chi2cdf((Degf*resti^2)/(K^2),Degf);
Prchi(s) =chiprob;
Combpdf(s)=chiprob*halfgauss(s);
end
Integ=0;
for s=1:2:boxes-2

M= Combpdf(s+1)*stepper*2;
T=( Combpdf(s)+Combpdf(s+2))*stepper;
Integ=Integ+(M*2+T)/3* shrinkfactor;
end
gammaest=Integ;
if gammaest*DirectK>gamma*DirectK
    DirectK=DirectK*-1;
    Kstep=-Kstep/2;
end
end

disp(' Z is 1.96.')
disp(' sample size is '),  disp(N)
disp(' gamma is '),  disp(gamma)
disp(' Coefficient for BA confidence interval for LOAs considered as a pair
is ')
disp(Kest)
```