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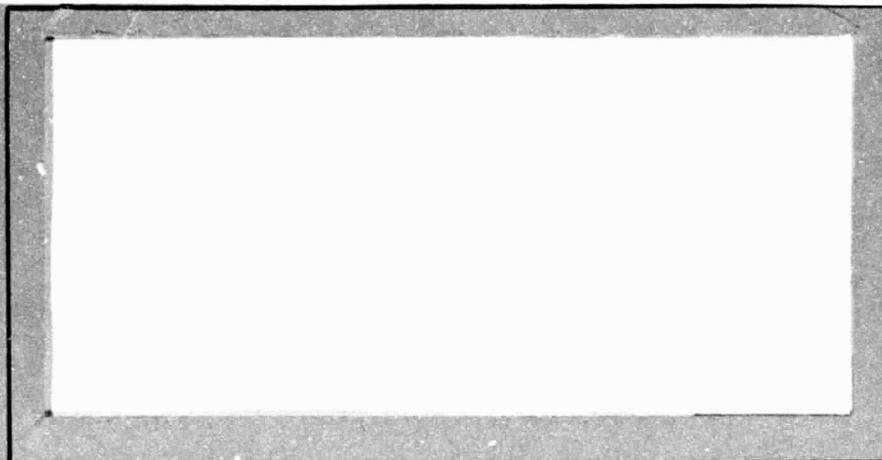
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TURBULENCE SIMULATION
MECHANIZATION FOR SPACE SHUTTLE ORBITER
DYNAMICS AND CONTROL STUDIES

SUMMARY REPORT

December 1977

By

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FOREWORD

This report was prepared for the National Aeronautics and Space Administration, Marshall Space Flight Center as a summary report on the third phase of work on Contract NAS8-31173, "Determination of Constant-Volume Balloon Capabilities for Aeronautical Research." The work described herein was performed by Science Applications, Incorporated, Huntsville Division with Dr. Frank B. Tatom as Principal Investigator.

The NASA Contracting Officer's Representative for this work was Dr. George H. Fichtl, MSFC Space Sciences Laboratory (ES-43).

ABSTRACT

The report is concerned with the mechanization of the NASA turbulence simulation model.

A description of the current version of the model in the form of a digital computer program, TBMOD, is presented. This description includes a discussion of the logic of the program, and definitions of all inputs and outputs. An alternate method of shear simulation suitable for incorporation into the model is described. The simulation is based on a von Karman spectrum and the assumption of isotropy. The resulting spectral density functions for the shear model are included.

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1. INTRODUCTION

The effects of atmospheric turbulence on the Space Shuttle Orbiter during horizontal and near horizontal flight during entry are critical for determining Space Shuttle design, control, and "pilot-in-the-loop" effects. A model for atmospheric turbulence along the flight path of the Shuttle Orbiter has been developed [1] which incorporates effects of instantaneous vertical and horizontal gusts at the vehicle center-of-gravity and horizontal and vertical shears along the yaw, pitch, and roll axes.

The current research effort has been divided into two parts. The first, which is described in Section 2, has involved implementing a modified version of the original model on the MSFC 1108 computer. The second effort, which is described in Section 3, has been concerned with the development of an alternate method for computing shears. A list of the references cited is provided in Section 4.

2. ATMOSPHERIC TURBULENCE SIMULATION PROGRAM

2.1 BACKGROUND

The computer program TBMOD is a routine to simulate atmospheric turbulence velocity components and (originally) velocity shear components. The program was initially developed by Colorado State University; SAI has developed it for use on the UNIVAC 1108.

The organization of the original program is shown in Figure 2-1 as a pseudo-flowchart. This flowchart differs from the usual in that its blocks represent calculation stages rather than typical computer operations. The annotations to the diagram give the actual names of the subroutines in which the calculations are performed. Figure 2-2 gives a more representative view of the hierarchy of the calling sequence.

2.2 MODIFICATIONS TO THE ORIGINAL PROGRAM

In the process of adapting the program to the UNIVAC 1108 and in the course of using the program a number of modifications were made. However the original code was retained intact as much as was practical. Moreover, in those modifications which were made the general terminology and logic of the original code were followed as closely as possible.

Modifications were made to the subroutines VAR and SCALE to bring these values into agreement with JSC 07700 [2]. The original code used relationships for the variance and integral length which were applicable to the surface boundary layer with a friction velocity of 1 ft/sec. The new code should provide suitable values for these parameters from the surface to 1.5×10^6 ft.

Similarly, changes were made in the computation of the coherences and variances in the formulation of the Fourier amplitudes. These modifications which include the addition of two subroutines COEFMU and INOMGA provide for the determination of all the Fourier amplitudes from interlevel correlations. The intralevel correlation between the longitudinal and the vertical velocity components is usually assumed to be valid only in the surface boundary layer.

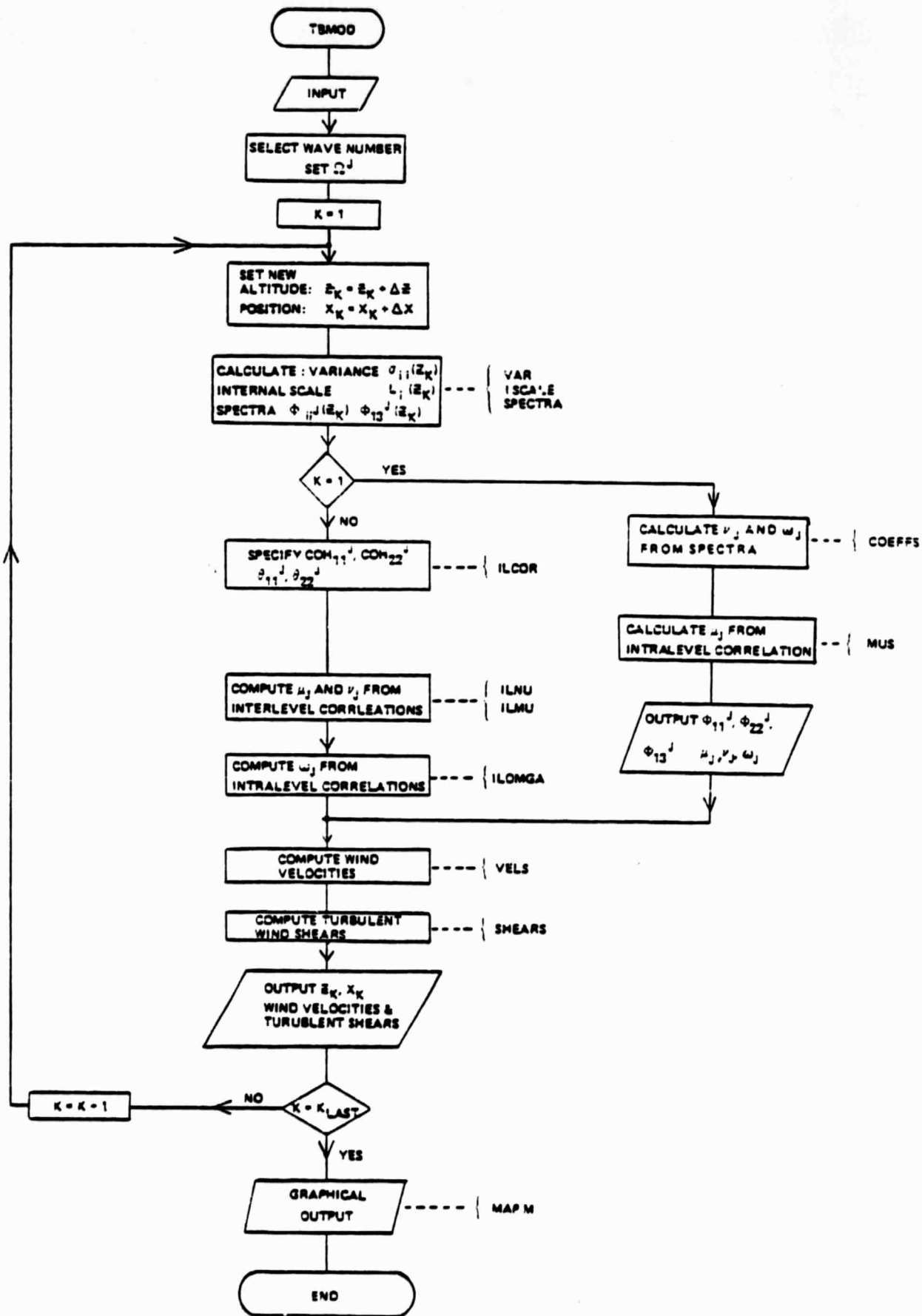
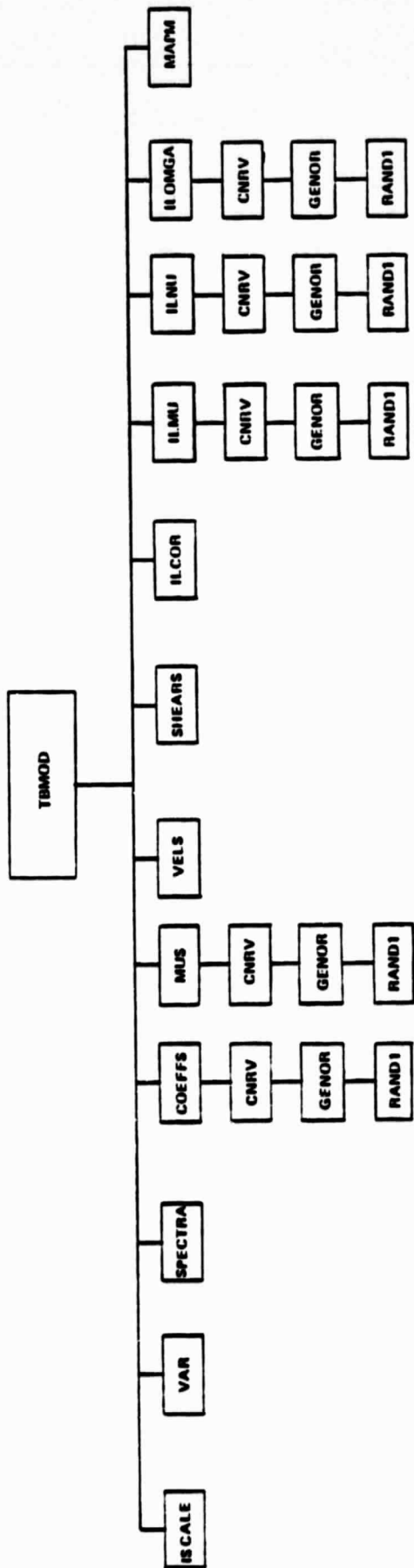


Figure 2-1. Original Logic for TBMOD



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Figure 2-2. Subroutine Hierarchy

Both computational and theoretical problems were discovered in the use of the subroutine SHEARS. Consequently, this subroutine was deleted from the program.

The subroutine MAPM supplied graphic output in the original program. This routine was never implemented for the UNIVAC 1008 system. A subroutine MAPM is retained in the current version of TBMOD and is called but the routine is a dummy routine which performs no function.

Figure 2-3 shows the flowchart for the current version of TBMOD with distinction being made for those subroutines which have been modified. The hierarchy of calling sequences is the same as shown in Figure 2-2 except that the routine SHEARS has been deleted, and routines COEFMU and INOMGA have been added. The routine MAPM, as explained above, is retained in name only in the program but serves no function; thus, it has been deleted from Figure 2-3.

2.3 INPUTS

The input to TBMOD consists of three READ instructions. The first,

```
READ(5,997,END=201) XSET
997 FORMAT (E14.7)
```

provides the seed for the random number generation. The value in use is

```
XSET = 19547322368
```

and is selected so that no cyclic set of numbers will be utilized in one calculation.

The second READ statement,

```
READ(5,102) BSTAT
102 FORMAT (10F8.4)
```

inputs the vector BSTAT, which is dimensioned to have 10 components. Four components of BSTAT are described in the comment cards incorporated into the program deck. BSTAT(1) is the maximum allowable wave number (ft^{-1}). BSTAT(2) is the spatial periodicity of the disturbance (ft). The set of wave numbers is selected from these two parameters and this causes a restriction on these two values such that

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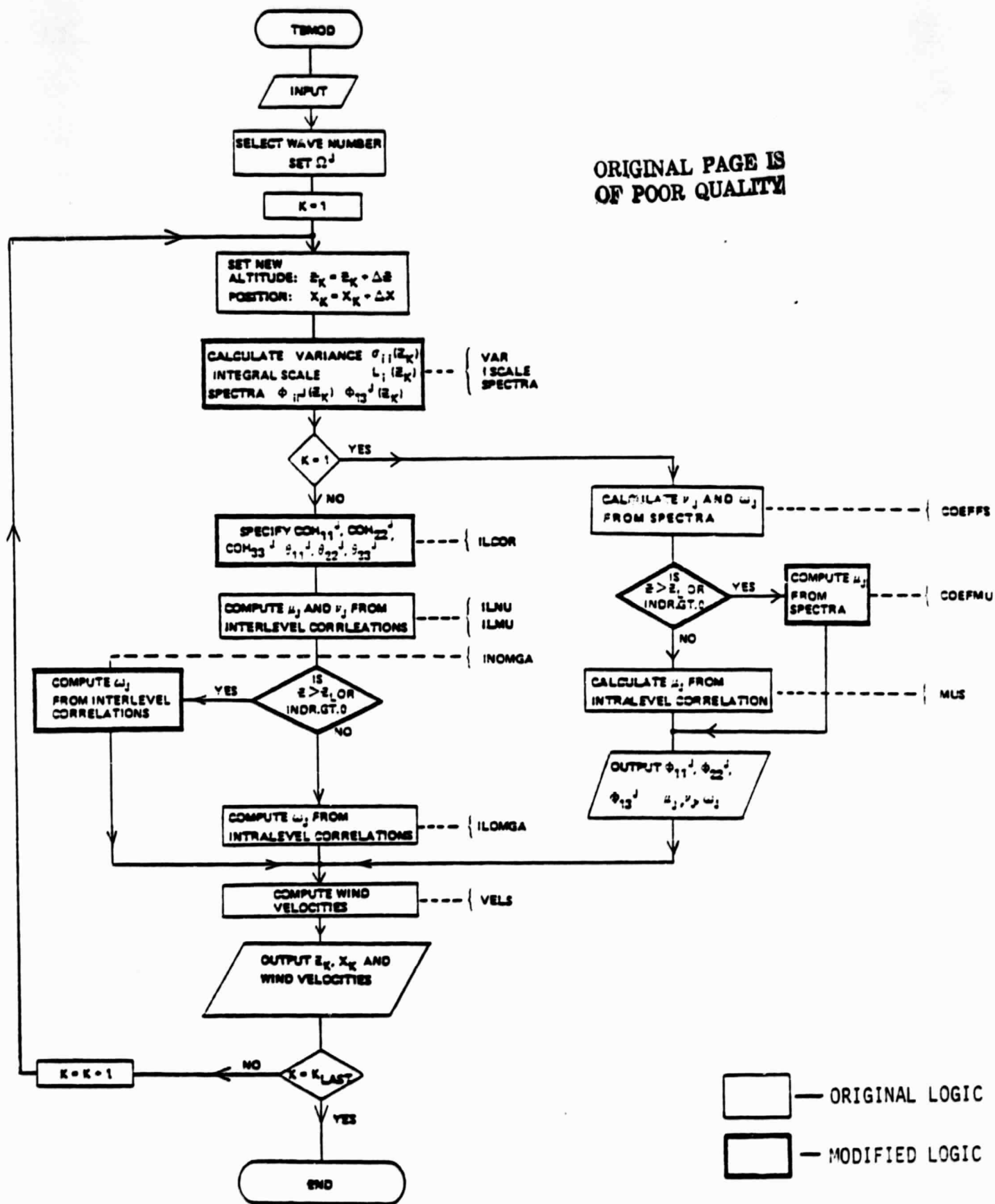


Figure 2-3. Final Modified Logic for TBMOD

$$\text{BSTAT}(1) * \text{BSTAT}(2) + 5.05 \leq 99.$$

BSTAT(3) is described as the surface roughness and BSTAT(4) as the maximum allowable change in altitude before recalculating parameters that depend on altitude; however, neither of these parameters is referenced in the program. These two parameters may however have been used in earlier versions of the original program. The last six components BSTAT(5) through BSTAT(10), are neither defined nor referenced in the program.

The third READ statement,

```
READ(5,103) X (KP), Z (KP)
102 FORMAT (2F20.10)
```

inputs the longitudinal and vertical position (ft) for the initial time step.

2.4 OUTPUTS

The output originally consisted of three sequences of statements. One of these sequences was for graphical output. This particular sequence has been deleted from the current program leaving only two output sequences. From the flowchart, Figure 2-3, the first sequence provides information regarding the first step only. The second output is shorter and consists only of the position of the vehicle and the variables simulated.

2.4.1 First Output

The first output statements are:

```
WRITE (6,503) MMAX
503 FORMAT (1H1, 'MMAX = ', I10//)
WRITE (6,995) XSET
995 FORMAT (1H0, ' XSET = ' I20)
WRITE (6,504)
504 FORMAT (1H0, 'WAVE NUMBERS')
WRITE (6,505) (KX (I), I = 1, MMAX)
505 FORMAT (IX, 10F10.5)
. . . . .
WRITE (6,32) (K,PHI(1,1,K),K=1,MMAX)
WRITE (6,32) (K,PHI(2,2,K),K=1,MMAX)
WRITE (6,32) (K,PHI(1,3,K),K=1,MMAX)
32 FORMAT (1X,4(14,2X,E11.3,3X,E11.3))
. . . . .
```

```
WRITE (6,46)
46 FORMAT (1H0,14X,'MU',39X,'NU',37X,'OMEGA')
WRITE (6,47) (MU(J),NU(J),OMEGA(J),J=1,MMAX)
47 FORMAT (1X,2(E12.4,5X,E12.4,10X),E12.4,5X,E12.4)
WRITE (6,999)
999 FORMAT (1H0,'KP',15X,'X',15D,'Z',15X,'J',15X,'V',15X,'W',//)
```

These statements are not all physically located together, as indicated, but pertain to the initial conditions or the first step in the program.

The first output statements refer to seven variables. The first of these, MMAX, is calculated according to the relation

$$\text{MMAX} = 2 * \text{BSTAT}(1) * \text{BSTAT}(2) + 1$$

and originally represented the total number of wave numbers covered in the calculation. As an explanation, both positive and negative wave numbers and the wave number zero were originally included; however, the calculations have been modified so that only the positive wave numbers contribute, and wave number zero is excluded from the calculation of the simulated variables.

The parameter XSET was defined in subsection 2.3. The KX vector is the set of wave numbers (ft^{-1}). The parameter PHI is the spectra (ft^3/sec^2). The parameters MU, NU and OMEGA are the Fourier amplitudes (ft/sec).

A typical output generated by this set of instructions is provided in Appendix A.

2.4.2 Second Output

The second output consists of the code

```
WRITE (6,51) KP, X(KP),Z(KP),U(KP),V(KP),W(KP)
51 FORMAT (IX,I3,7X,5E16.7)
```

The output variables here are the step number KP, the longitudinal position X(ft), the vertical position Z(ft), the longitudinal wind gust velocity U (ft/sec) the lateral velocity V(ft/sec), and the vertical velocity W(ft/sec) A typical output generated by this set of instructions is included in Appendix A.

2.5 INTERNAL CONTROL PARAMETERS

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A number of important control parameters are not accessible by input data and should be pointed out. The first parameters in the category are given in the code as

```
INDR = 0  
ZB   = 1000
```

These parameters control the use of the intralevel correlation in calculating the simulation parameters. The intralevel correlations are considered to be valid only in the surface boundary level which satisfies the relation

$$Z \leq ZB \quad (\text{feet})$$

However, it may be desirable not to use these intralevel correlations even in the boundary layer; in which case,

```
INDR > 0
```

There is no input which allows the user to select the step interval. This is done internally by the code based on the following logic:

```
KP = KP + 1  
X(KP) = X(KP) + 100  
Z(KP) = Z(KP) - 36.397
```

Thus at every step the vehicle moves longitudinally 100 ft and vertically down 36.397 feet.

The final internal control controls the number of steps taken. Originally this control was based on the number of steps KP, and was coded as

```
IF(KP.GT.10) GO TO 200
```

This was modified to allow the vehicle to descend to the ground. The modified code reads

```
IF (Z(KP).LE.0) GO TO 200
```

However, the modified code could be replaced or augmented by the original statement or a DO-loop to restrict the number of computation steps.

Because these controls are internal, the code must be modified if any change is desired by the user. Any or all of these controls could be added to the input list and such a change is recommended.

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3. ALTERNATE METHOD OF SHEAR SIMULATION

3.1 BACKGROUND

A careful examination of the derivation of the original shear simulation [1] raised certain basic issues regarding its validity. Attempts to obtain clarification of these issues with the original authors were not successful within the time period covered by this report. For this reason an alternate method of simulating the wind shear was investigated.

3.2 DERIVATION OF THREE-DIMENSIONAL SHEAR SPECTRA

The basic approach in the development of an alternate shear model has involved developing a spectral representation of shears which is based on the spectral representation of gusts. The basic relation can be derived as follows:

By definition,

$$\begin{aligned} < u(x, y, z)u(x', y', z') > \\ &= \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \phi_{11}(k_1, k_2, k_3) \exp\{j[k_1(x - x') + k_2(y - y') \\ &\quad + k_3(z - z')]\} dk_1 dk_2 dk_3 \end{aligned} \quad (1)$$

Defferentiation of Eq. (1) with respect to y yields:

$$\begin{aligned} < \frac{\partial u}{\partial y}(x, y, z) u(x', y', z') > \\ &= \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \phi_{11}(k_1, k_2, k_3) jk_2 \exp\{j[k_1(x - x') \\ &\quad + k_2(y - y') + k_3(z - z')]\} dk_1 dk_2 dk_3 \end{aligned} \quad (2)$$

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Differentiation of Eq. (2) with respect to y' yields:

$$\begin{aligned}
 & \left\langle \frac{\partial u}{\partial y}(x, y, z) \frac{\partial u}{\partial y'}(x', y', z') \right\rangle \\
 &= \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \phi_{11}(k_1, k_2, k_3) k_2^2 \exp\{j[k_1(x - x') \\
 &+ k_2(y - y') + k_3(z - z')]\} dk_1 dk_2 dk_3 \quad (3)
 \end{aligned}$$

By inspection of Eq. (3) the spectral density function of the $\frac{\partial u}{\partial y}$ shear, $\phi_{11/22}$, can be expressed as

$$\phi_{11/22}(k_1, k_2, k_3) = \phi_{11}(k_1, k_2, k_3) k_2^2 \quad (4)$$

Likewise, the spectral density function of the $\frac{\partial u}{\partial x}$ shear, $\phi_{11/11}$, can be expressed as

$$\phi_{11/11}(k_1, k_2, k_3) = \phi_{11}(k_1, k_2, k_3) k_1^2 \quad (5)$$

or in general,

$$\phi_{ii/jj}(k_1, k_2, k_3) = \phi_{ii}(k_1, k_2, k_3) k_j^2 \quad (6)$$

Now the three-dimensional spectra for isotropic turbulence in incompressible flow must satisfy the relation [3]

$$\phi_{ij}(k_1, k_2, k_3) = \frac{E(k)}{4\pi k^2} \left(\delta_{ij} - \frac{k_i k_j}{k^2} \right) \quad (7)$$

The energy spectrum $E(k)$ for isotropic turbulence in turn can be related to the one-dimensional spectrum $\phi_{11}(k_1)$ by the relation [3]

$$E(k) = k^3 \frac{\partial}{\partial k} \left[\frac{1}{k} \frac{\partial \phi_{11}(k_1)}{\partial k} \right] \quad (8)$$

For a two-sided von Karman spectrum [4],

$$\phi_{11}(k_1) = \frac{\sigma^2 L}{\pi} \frac{1}{[1 + (aLk_1)^2]^{5/6}} \quad (9)$$

And thus

$$E(k) = \frac{55\sigma^2 L}{9\pi} \frac{(aLk)^4}{[1 + (aLk)^2]^{17/6}} \quad (10)$$

A combination of Eqs. (7) and (10) yields

$$\phi_{11}(k_1, k_2, k_3) = \frac{55\sigma^2 a^4 L^5}{36\pi^2} \frac{(k^2 - k_1^2)}{[1 + a^2 L^2 (k_1^2 + k_2^2 + k_3^2)]^{17/6}} \quad (11)$$

$$\phi_{22}(k_1, k_2, k_3) = \frac{55\sigma^2 a^4 L^5}{36\pi^2} \frac{(k^2 - k_2^2)}{[1 + a^2 L^2 (k_1^2 + k_2^2 + k_3^2)]^{17/6}} \quad (12)$$

$$\phi_{33}(k_1, k_2, k_3) = \frac{55\sigma^2 a^4 L^5}{36\pi^2} \frac{(k^2 - k_3^2)}{[1 + a^2 L^2 (k_1^2 + k_2^2 + k_3^2)]^{17/6}} \quad (13)$$

A combination of Eqs (6), (11), (12), and (13) yields

$$\phi_{ii/jj}(k_1, k_2, k_3) = \frac{55\sigma^2 a^4 L^5}{36\pi^2} \frac{(k - k_i^2)k_j^2}{[1 + a^2 L^2 (k_1^2 + k_2^2 + k_3^2)]^{17/6}} \quad (14)$$

Eq (14) represents the three-dimensional shear spectral density function based on the von Karman spectrum.

3.3 DERIVATION OF TWO-DIMENSIONAL SHEAR SPECTRA

To obtain the two-dimensional spectra $\phi_{ii/jj}(k_1, k_2)$ integration over k_3 must be performed. Thus,

$$\phi_{11/22}(k_1, k_2) = \frac{55\sigma^2 a^4 L^5}{36\pi^2} \int_{-\infty}^{\infty} \frac{(k - k_1^2)k_2^2 dk_3}{[1 + a^2 L^2 (k_1^2 + k_2^2 + k_3^2)]^{17/6}} \quad (15)$$

By inspection $\phi_{11/22}$ is seen to be even. Thus

$$\phi_{11/22}(k_1, k_2) = \frac{55\sigma^2 a^4 L^5}{18\pi^2} \int_0^{\infty} \frac{(k_2^2 + k_3^2)k_2^2 dk_3}{[1 + a^2 L^2 (k_1^2 + k_2^2 + k_3^2)]^{17/6}} \quad (16)$$

To carry out the integration it is important to note that the beta function can be defined [5] as follows:

$$\beta\left(\frac{\kappa}{\alpha}, \lambda - \frac{\kappa}{\alpha}\right) = \alpha c^{\kappa/\alpha} d^{\lambda - \kappa/\alpha} \int_0^{\infty} \frac{t^{\kappa-1} dt}{(ct^{\alpha} + d)^{\lambda}} \quad (\alpha > 0, \lambda > \frac{\kappa}{\alpha} > 0, cd > 0) \quad (17)$$

Furthermore the beta function is related to the gamma function by the relation

$$\beta\left(\frac{\kappa}{\alpha}, \lambda - \frac{\kappa}{\alpha}\right) = \frac{\Gamma\left(\frac{\kappa}{\alpha}\right) \Gamma\left(\lambda - \frac{\kappa}{\alpha}\right)}{\Gamma(\lambda)} \quad (18)$$

It is also important to note that

$$\begin{aligned} a &= \frac{\Gamma\left(\frac{1}{3}\right)}{\Gamma\left(\frac{1}{2}\right) \Gamma\left(\frac{5}{6}\right)} \\ &= \frac{\Gamma\left(\frac{1}{3}\right)}{\sqrt{\pi} \Gamma\left(\frac{5}{6}\right)} \end{aligned} \quad (19)$$

Thus

$$\begin{aligned} \phi_{11/22}(k_1, k_2) &= \frac{55\sigma_a^2 L^4}{18\pi^2} \left\{ \frac{k_2^4 \beta\left(\frac{1}{2}, \frac{7}{3}\right)}{2(a^2 L^2)^{1/2} [1 + a^2 L^2 (k_1^2 + k_2^2)]^{7/3}} \right. \\ &\quad \left. + \frac{k_2^2 \beta\left(\frac{3}{2}, \frac{4}{3}\right)}{2(a^2 L^2)^{3/2} [1 + a^2 L^2 (k_1^2 + k_2^2)]^{4/3}} \right\} \\ &= \frac{\sigma_a^2 L^2}{6\pi} \frac{k_2^2 [1 + a^2 L^2 (k_1^2 + 11k_2^2/3)]}{[1 + a^2 L^2 (k_1^2 + k_2^2)]^{7/3}} \end{aligned} \quad (20)$$

Likewise,

$$\phi_{11/11}(k_1, k_2) = \frac{\sigma_a^2 L^2}{6\pi} \frac{k_1^2 [1 + a^2 L^2 (k_1^2 + 11k_2^2/3)]}{[1 + a^2 L^2 (k_1^2 + k_2^2)]^{7/3}} \quad (21)$$

$$\phi_{22/22}(k_1, k_2) = \frac{\sigma_a^2 L^2}{6\pi} \frac{k_2^2 [1 + a^2 L^2 (11k_1^2/3 + k_2^2)]}{[1 + a^2 L^2 (k_1^2 + k_2^2)]^{7/3}} \quad (22)$$

$$\phi_{22/11}(k_1, k_2) = \frac{\sigma_a^2 L^2}{6\pi} \frac{k_1^2 [1 + a^2 L^2 (11k_1^2/3 + k_2^2)]}{[1 + a^2 L^2 (k_1^2 + k_2^2)]^{7/3}} \quad (23)$$

Other two-dimensional shear spectral density functions based on integration over k_2 can be obtained in a similar manner.

According to such development the two-dimensional spectra in terms of dimensionless wave number, K , can be written as follows:

$$\phi_{11/11}(K_1, K_n) = \frac{\sigma^2}{6\pi} \frac{K_1^2 (1 + K_1^2 + 11K_n^2/3)}{(1 + K_1^2 + K_n^2)^{7/3}} \quad (n = 2 \text{ or } 3) \quad (24)$$

$$\phi_{22/11}(K_1, K_n) = \frac{\sigma^2}{6\pi} \frac{K_1^2 (1 + 11K_1^2/3 + K_n^2)}{(1 + K_1^2 + K_n^2)^{7/3}} \quad (n = 2 \text{ or } 3) \quad (25)$$

$$\phi_{33/11}(K_1, K_n) = \frac{4\sigma^2}{9\pi} \frac{K_1^2 (K_1^2 + K_n^2)}{(1 + K_1^2 + K_n^2)^{7/3}} \quad (n = 2 \text{ or } 3) \quad (26)$$

$$\phi_{11/22}(K_1, K_2) = \frac{\sigma^2}{6\pi} \frac{K_2^2 (1 + K_1^2 + 11K_2^2/3)}{(1 + K_1^2 + K_2^2)^{7/3}} \quad (27)$$

$$\phi_{22/22}(K_1, K_2) = \frac{\sigma^2}{6\pi} \frac{K_2^2 (1 + 11K_1^2/3 + K_2^2)}{(1 + K_1^2 + K_2^2)^{7/3}} \quad (28)$$

$$\phi_{33/22}(K_1, K_2) = \frac{4\sigma^2}{9\pi} \frac{K_2^2 (K_1^2 + K_2^2)}{(1 + K_1^2 + K_2^2)^{7/3}} \quad (29)$$

$$\phi_{11/33}(K_1, K_3) = \frac{\sigma^2}{6\pi} \frac{K_3^2 (1 + K_1^2 + 11K_3^2/3)}{(1 + K_1^2 + K_3^2)^{7/3}} \quad (30)$$

$$\phi_{22/33}(K_1, K_3) = \frac{\sigma^2}{6\pi} \frac{K_3^2 (1 + 11K_1^2/3 + K_3^2)}{(1 + K_1^2 + K_3^2)^{7/3}} \quad (31)$$

$$\phi_{33/33}(K_1, K_3) = \frac{4\sigma^2}{9\pi} \frac{K_3^2 (K_1^2 + K_3^2)}{(1 + K_1^2 + K_3^2)^{7/3}} \quad (32)$$

where $K_i = aLk_i$

Eqs (24) through (32) represent the two-dimensional shear spectral density functions based on the von Karman spectrum.

3.4 DERIVATION OF ONE-DIMENSIONAL SHEAR SPECTRA

In order to obtain one-dimensional spectra, $\phi_{ii/jj}(K_1)$, Eqs (24) through (32) must be integrated over all values of K_2 or K_3 . For $\phi_{11/11}$, $\phi_{22/11}$ and $\phi_{33/11}$ this integration can be accomplished analytically by means of beta functions with the following results:

$$\phi_{11/11}(K_1) = \frac{\sigma^2 K_1^2}{\pi a^2 L (1+K_1^2)^{5/6}} \quad (33)$$

$$\phi_{22/11}(K_1) = \frac{\sigma^2 K_1^2 (1+8K_1^2/3)}{2\pi a^2 L (1+K_1^2)^{11/6}} \quad (34)$$

$$\phi_{33/11}(K_1) = \frac{\sigma^2 K_1^2 (1+8K_1^2/3)}{2\pi a^2 L (1+K_1^2)^{11/6}} \quad (35)$$

In attempting to integrate the remaining six spectral functions over all values of K_2 or K_3 it is observed that the numerators of the integrands contain terms of the order of K_2^4 or K_3^4 . For these cases

$$\lambda = \frac{7}{3}$$

$$\frac{\kappa}{\alpha} = \frac{5}{2}$$

and

$$\lambda < \frac{\kappa}{\alpha}$$

Thus, the integration of Eqs (27) through (32) cannot be represented as beta functions. Numerical integration reveals that definite integrals of such a form do not have a finite value when integrated from minus to plus infinity. In order to have a finite value some finite limits to the integrals must be established.

Before proceeding with any numerical integration, certain symmetrical features of the one-dimensional spectra $\phi_{ij/jj}$ should be considered

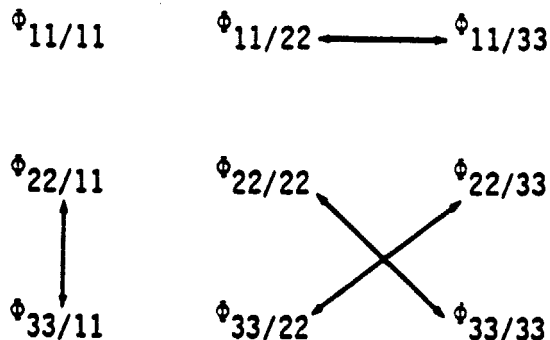
An examination of the two-dimensional spectra reveals that

$$\phi_{11/22}(K_1) = \phi_{11/33}(K_1) \quad (36)$$

$$\phi_{22/22}(K_1) = \phi_{33/33}(K_1) \quad (37)$$

$$\phi_{33/22}(K_1) = \phi_{22/33}(K_1) \quad (38)$$

Thus the one-dimensional spectra can be paired as follows:



Thus in the numerical integration process only $\phi_{11/22}$, $\phi_{22/22}$, $\phi_{33/22}$ need to be evaluated.

In carrying out such numerical integration, the integrand can be multiplied by 2 and the lower limit of integration can then be set to zero because the integrand is an even function. In this manner numerical integration of the two-dimensional shear spectral density functions for $\phi_{11/22}(K_1, K_2)$, $\phi_{22/22}(K_1, K_2)$, and $\phi_{33/22}(K_1, K_2)$ has been accomplished to obtain $\phi_{11/22}(K_1)$, $\phi_{22/22}(K_1)$, and $\phi_{33/22}(K_1)$. The values of K_1 for which the integration was performed ranged from 0 to 1000. The lower limit of K_2 was set at 0 while for the upper limit a series of values (.001, .01, .1, 1, 10, and 100) have been used. The results have been

plotted as $\phi_{ii/jj}$ versus K_1 as shown in Figures 3-1 through 3-3. The results indicate that the one-dimensional spectra obtained in such a manner are strongly dependent on the upper limit of K_2 .

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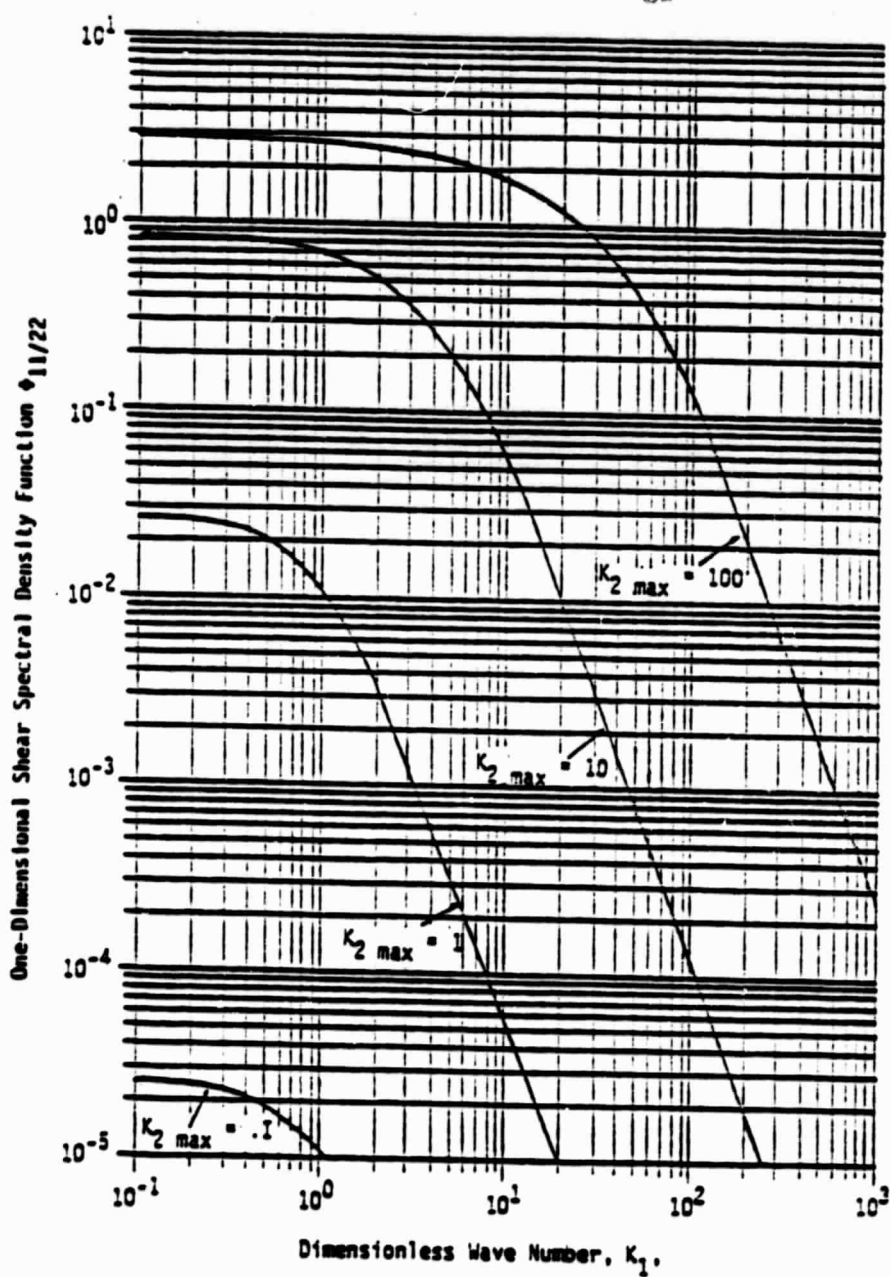


Figure 3-1. One-Dimensional Shear Spectral Density Function $\phi_{11/22}(k_1)$

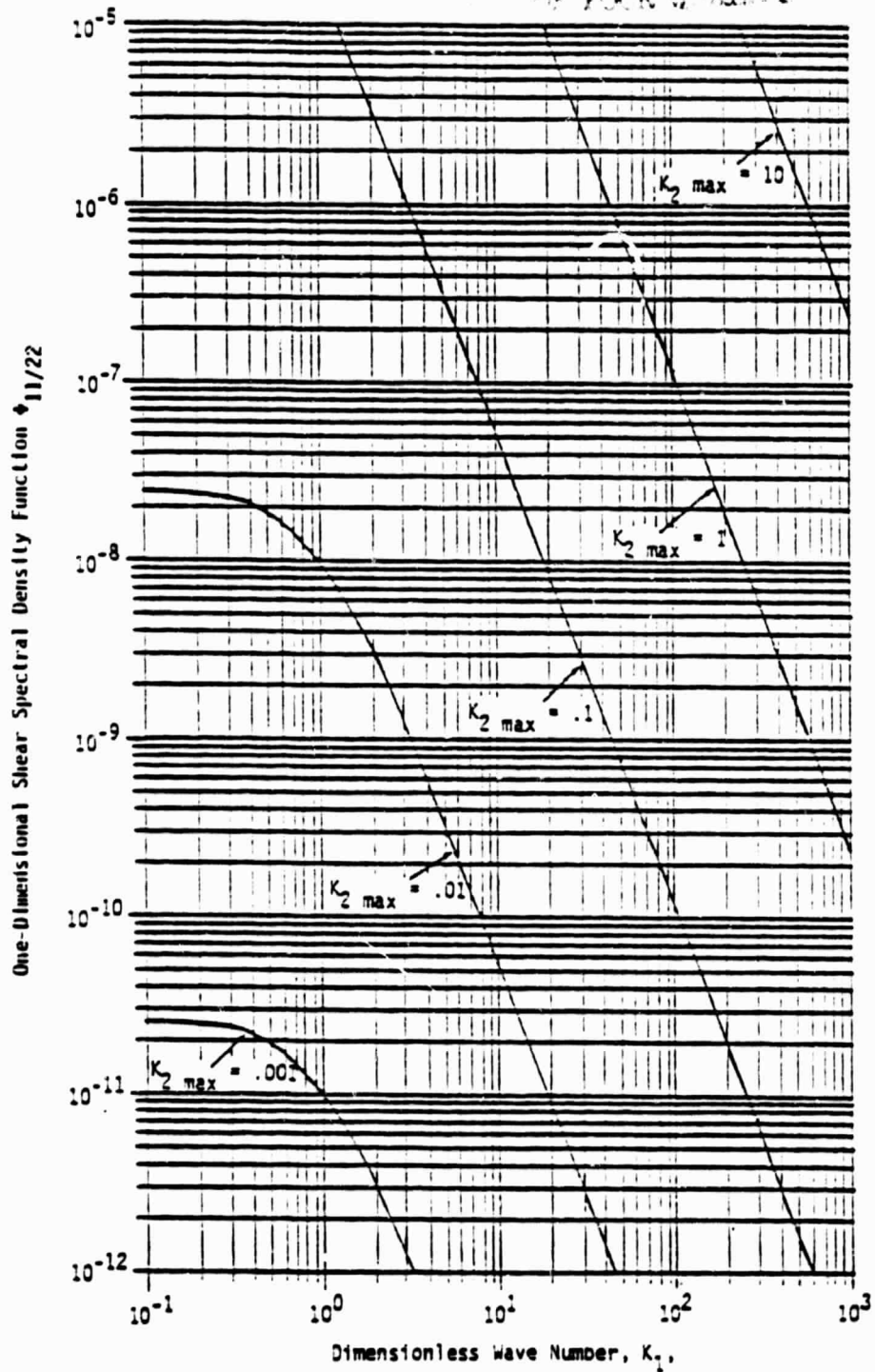


Figure 3-1. One-Dimensional Shear Spectral Density
Function $\phi_{11/22}(K_1)$ (Continued)

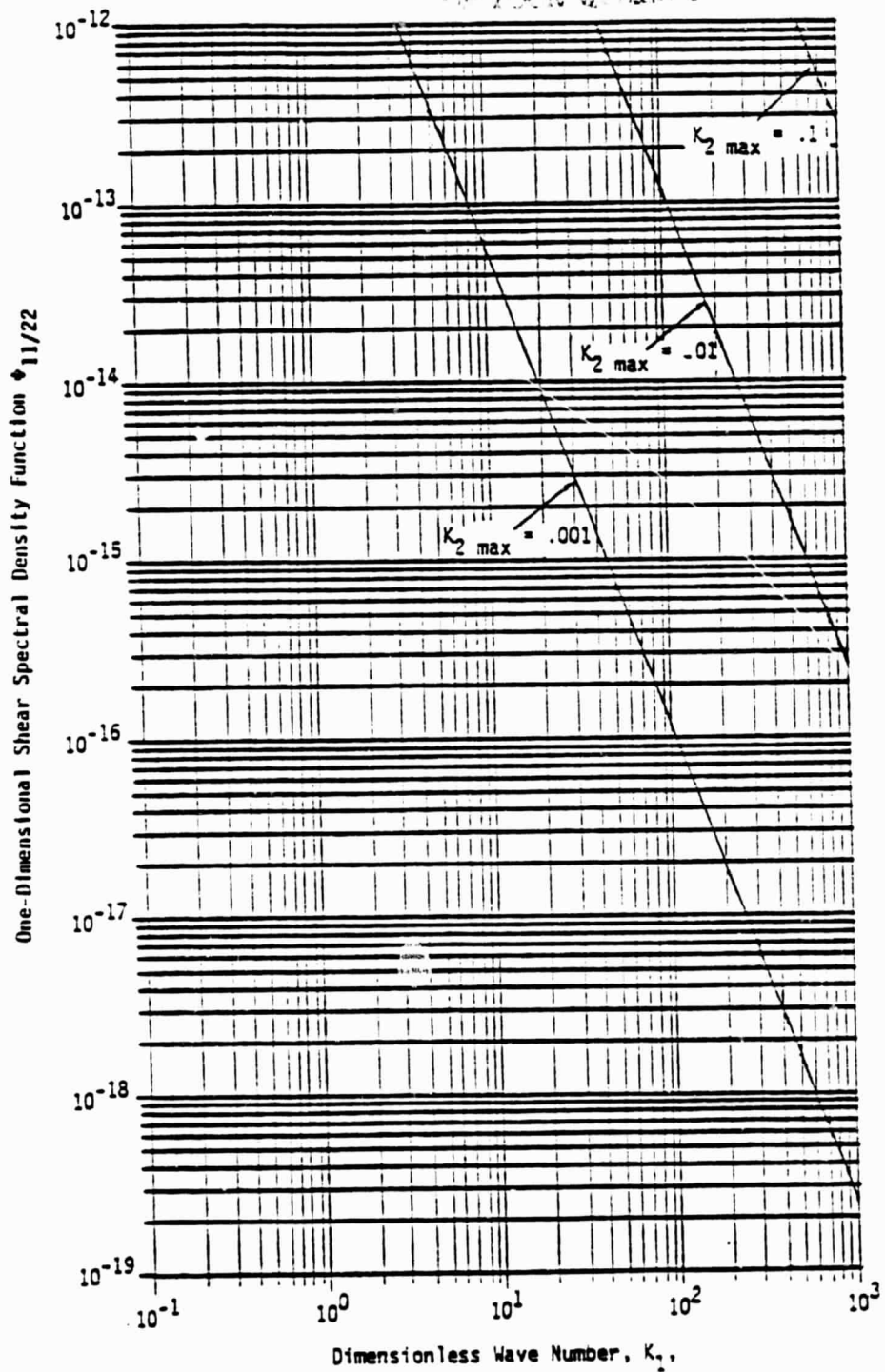


Figure 3-1. One-Dimensional Shear Spectral Density Function $\phi_{11/22}(K_1)$ (Concluded)

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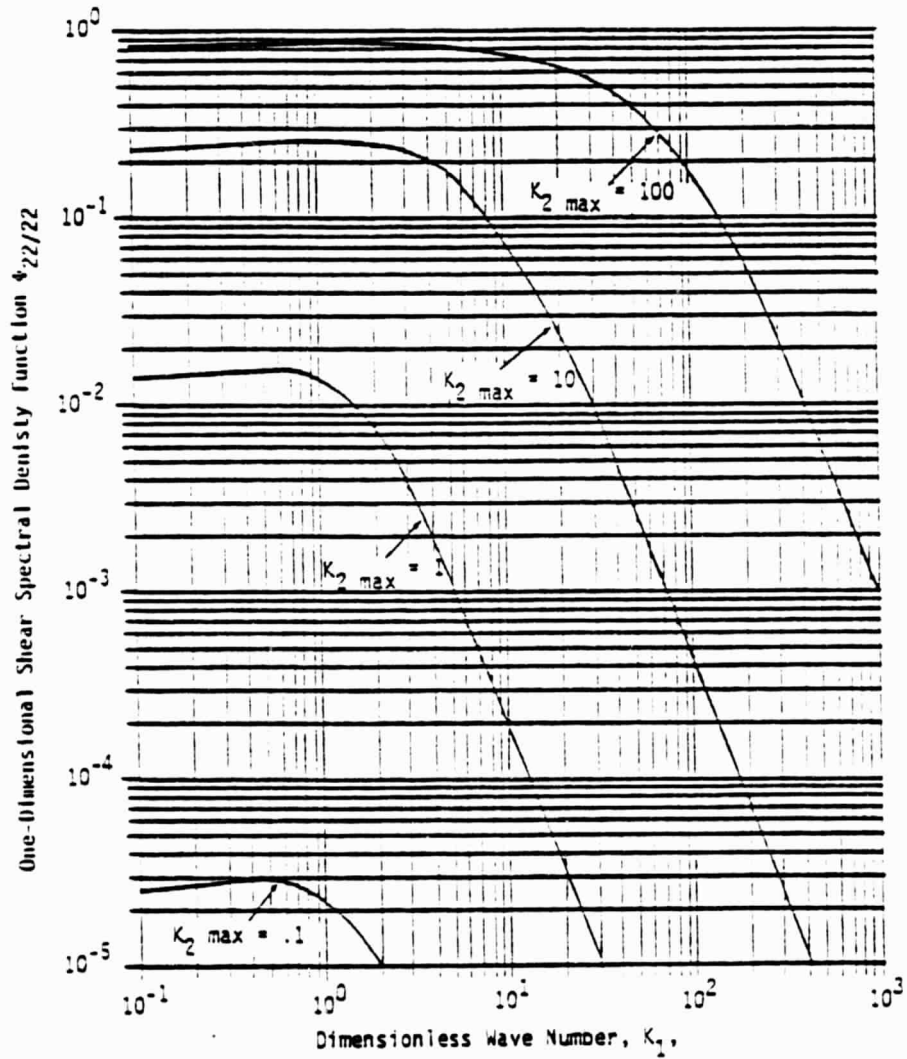


Figure 3-2. One-Dimensional Shear Spectral Density
Function $\Phi_{22/22}(K_1)$

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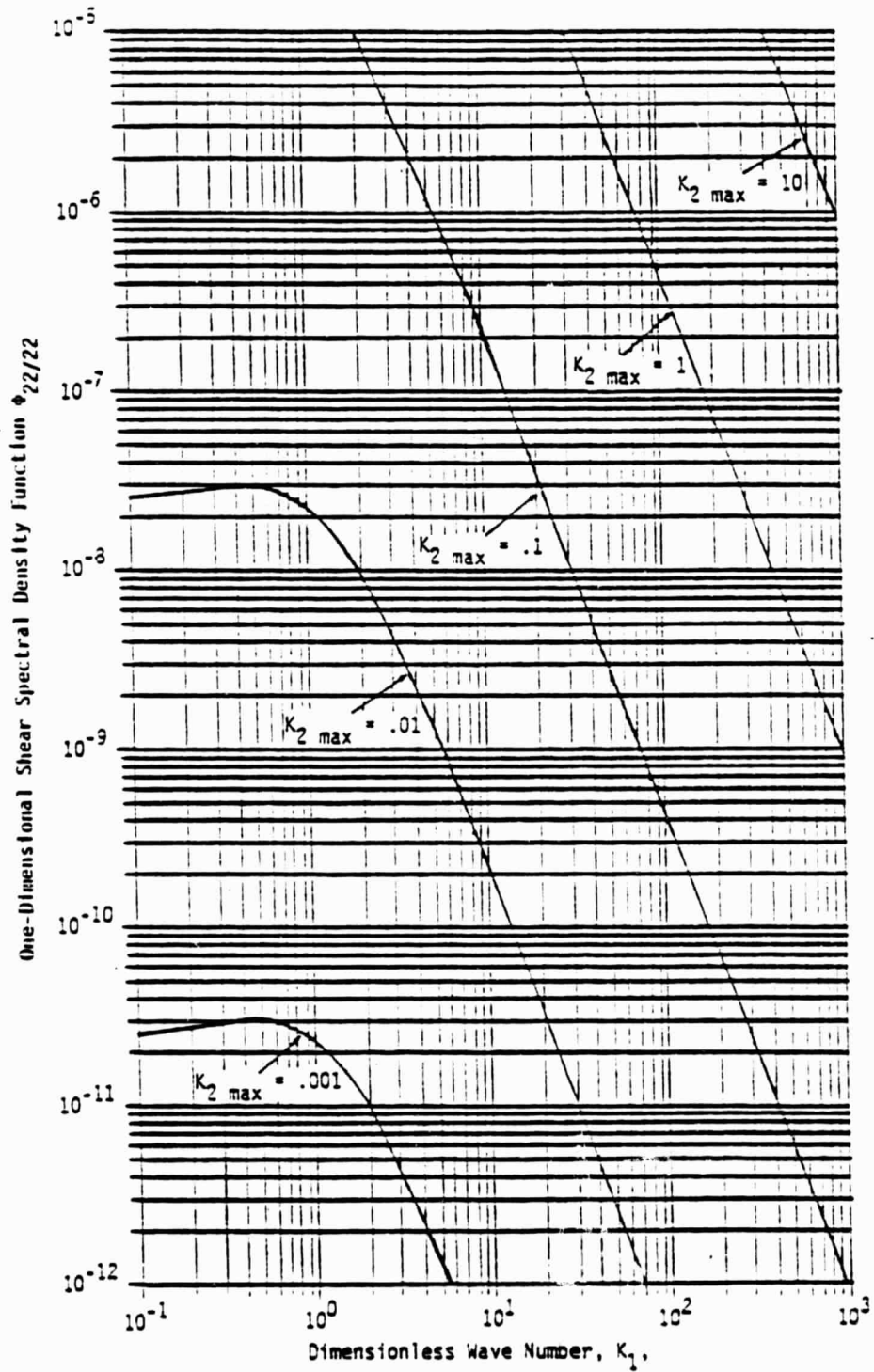


Figure 3-2. One-Dimensional Shear Spectral Density Function $\phi_{22/22}(K_1)$ Continued)

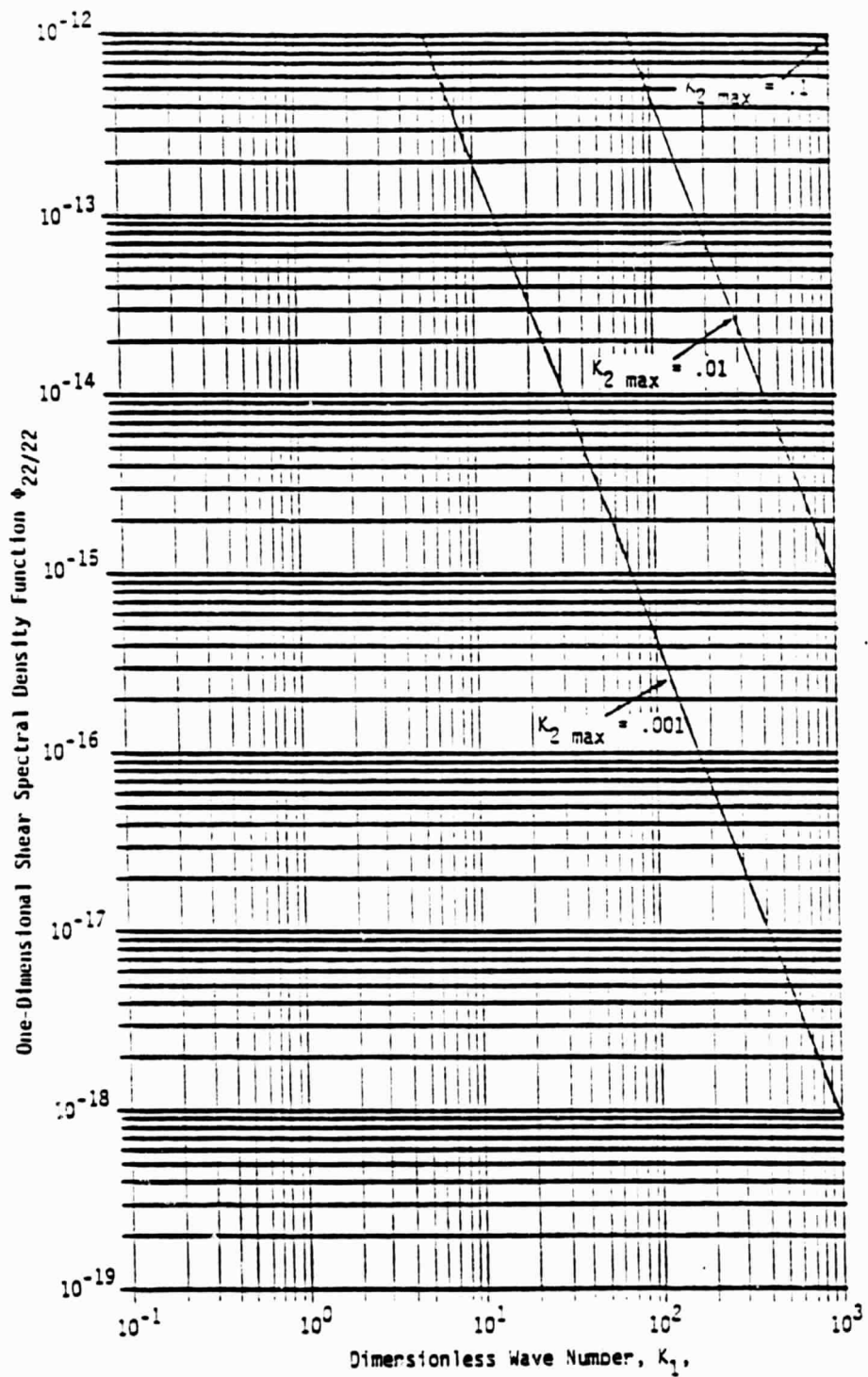


Figure 3-2. One-Dimensional Shear Spectral Density Function $\Phi_{22/22}(K_1)$ (Concluded)

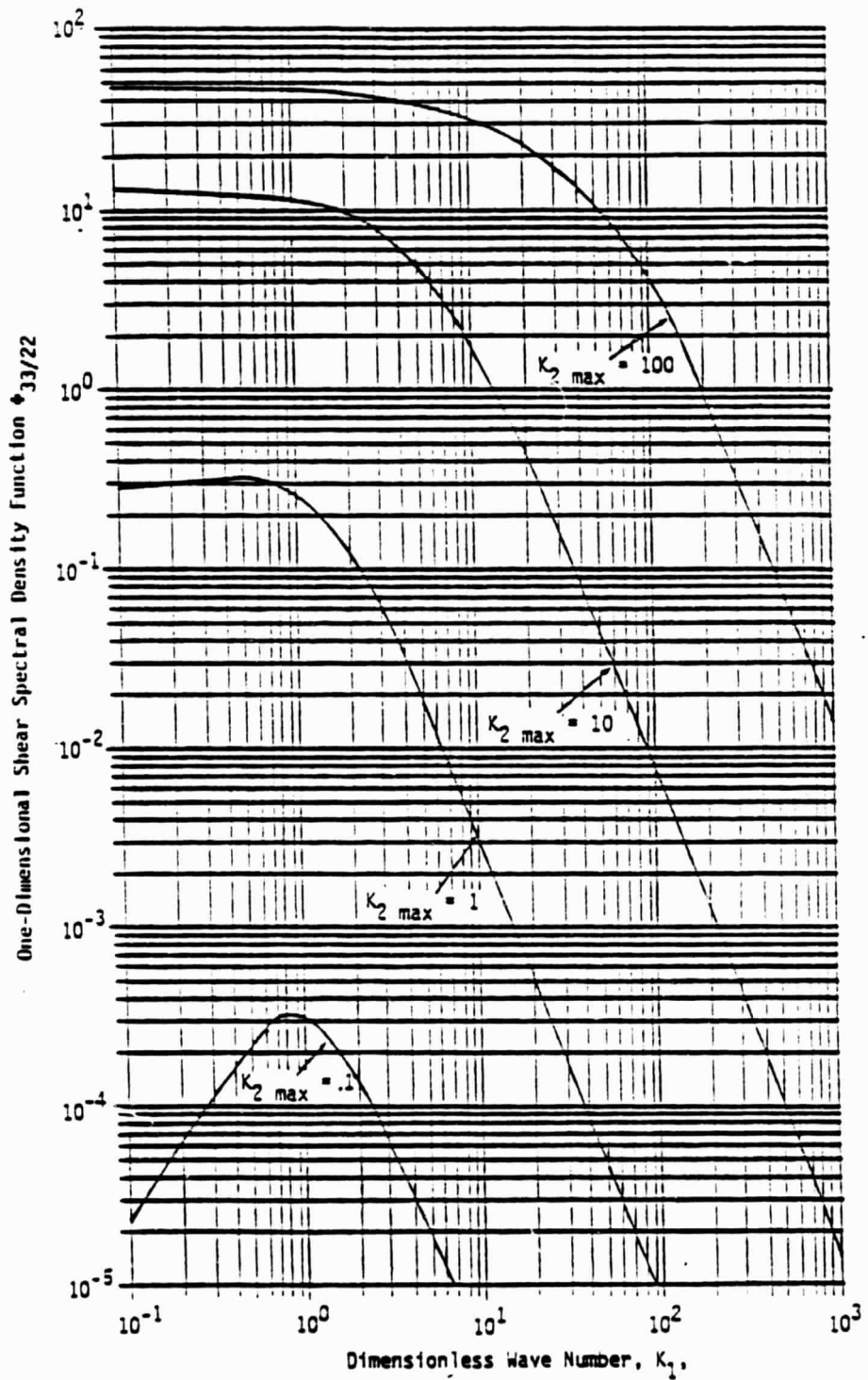


Figure 3-3. One-Dimensional Shear Spectral Density Function $\phi_{33/22}(K_1)$

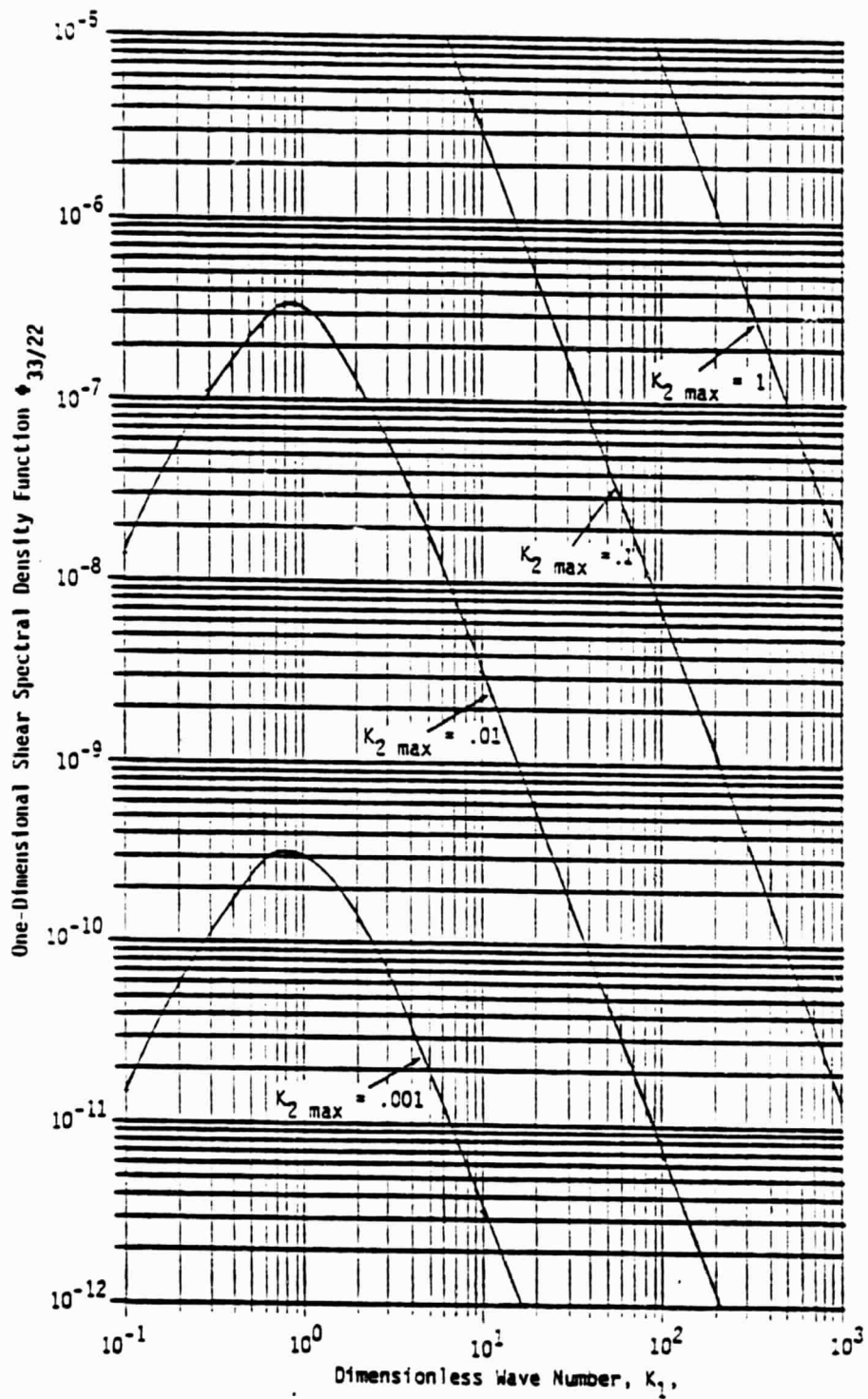


Figure 3-3. One-Dimensional Shear Spectral Density Function $\phi_{33/22}(K_1)$ (Continued)

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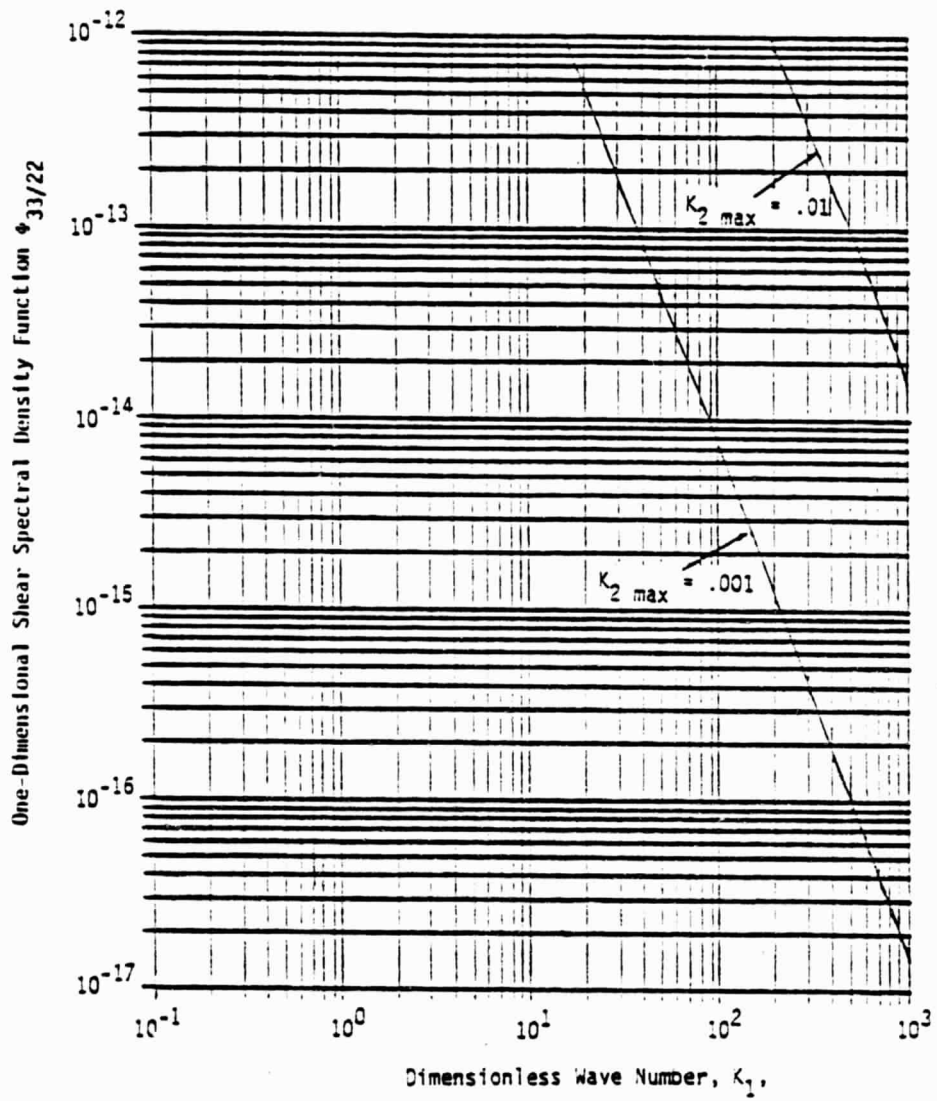


Figure 3-3. One-Dimensional Shear Spectral Density
Function $\phi_{33/22}(K_1)$ (Concluded)

4. REFERENCES CITED

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3. Lumley, J. L. and Panofsky, H. A.; The Structure of Atmospheric Turbulence, Interscience Publishers, New York, 1964.
4. Etkin, B.; Dynamics of Atmospheric Flight, John Wiley & Sons, Inc. New York, 1972.
5. Abramowitz, M. and Stegun, I. A. (eds.), Handbook of Mathematical Functions with Formulas, Graphs and Mathematical Tables, National Bureau of Standards Applied Mathematics Series 55, Washington, D.C., 1965.

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APPENDIX A

SAMPLE OUTPUT FROM TBMOD

As noted in subsection 2.4 the output from TBMOD consists of two parts. The first output is presented in Table A-1. The second output is presented in Table A-2.

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Table A-1. First Output

MAX =	139	XSET =	19547322368
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2	01740	01720	01700
3	01580	01520	01500
4	01420	01360	01300
5	01260	01200	01100
6	01100	01040	00900
7	00940	00880	00800
8	00780	00720	00600
9	00620	00560	00500
10	00460	00400	00300
11	00300	00240	00200
12	00140	00080	00100
13	00000	00000	00000
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115	00000	00000	00000

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Table A-1. First Output (Continued)

141	.509-31	.000	142	.511-31	.000	143	.553-01	.000	144	.591-31	.000
145	.521-31	.000	146	.533-31	.000	147	.495-01	.000	148	.553-31	.000
149	.452-01	.000	150	.417-31	.000	151	.423-01	.000	152	.413-31	.000
153	.397-31	.000	154	.395-31	.000	155	.373-01	.000	156	.362-31	.000
157	.552-31	.000	158	.342-31	.000	159	.332-01	.000	160	.323-31	.000
161	.314-31	.000	162	.336-31	.000	163	.299-01	.000	164	.293-31	.000
165	.283-31	.000	166	.275-31	.000	167	.257-01	.000	168	.262-31	.000
169	.256-31	.000	170	.250-31	.000	171	.244-01	.000	172	.239-31	.000
173	.233-31	.000	174	.228-31	.000	175	.223-01	.000	176	.219-31	.000
177	.213-31	.000	178	.208-31	.000	179	.204-01	.000	180	.200-31	.000
181	.196-31	.000	182	.192-31	.000	183	.195-01	.000	184	.191-31	.000
185	.181-31	.000	186	.177-31	.000	187	.174-01	.000	188	.171-31	.000
189	.167-31	.000	190	.154-31	.000	191	.151-01	.000	192	.148-31	.000
193	.156-31	.000	194	.153-31	.000	195	.153-01	.000	196	.149-31	.000
197	.145-31	.000	198	.143-31	.000	199	.143-01	.000	200	.143-31	.000
201	.100-31	.000	202	.108-31	.000	203	.315-03	.000	204	.325-03	.000
205	.334-33	.000	206	.344-33	.000	207	.354-03	.000	208	.354-33	.000
209	.375-33	.000	210	.356-33	.000	211	.376-03	.000	212	.413-33	.000
213	.422-33	.000	214	.436-33	.000	215	.447-03	.000	216	.464-33	.000
217	.479-33	.000	218	.474-33	.000	219	.511-03	.000	220	.523-33	.000
221	.546-33	.000	222	.555-33	.000	223	.594-03	.000	224	.505-33	.000
225	.527-33	.000	226	.649-33	.000	227	.673-03	.000	228	.539-33	.000
229	.725-33	.000	230	.753-33	.000	231	.782-03	.000	232	.933-33	.000
233	.845-33	.000	234	.890-33	.000	235	.915-03	.000	236	.954-33	.000
237	.995-33	.000	238	.134-02	.000	239	.128-02	.000	240	.113-32	.000
241	.118-02	.000	242	.124-32	.000	243	.130-02	.000	244	.135-32	.000
245	.143-02	.000	246	.150-32	.000	247	.157-02	.000	248	.155-32	.000
249	.174-02	.000	250	.193-32	.000	251	.193-02	.000	252	.204-32	.000
253	.216-32	.000	254	.229-32	.000	255	.242-02	.000	256	.257-32	.000
257	.273-32	.000	258	.290-32	.000	259	.339-02	.000	260	.333-32	.000
261	.353-32	.000	262	.378-32	.000	263	.435-02	.000	264	.435-32	.000
265	.464-32	.000	266	.536-32	.000	267	.547-02	.000	268	.592-32	.000
269	.543-32	.000	270	.730-32	.000	271	.755-02	.000	272	.833-32	.000
273	.920-32	.000	274	.131-31	.000	275	.112-01	.000	276	.125-31	.000
277	.139-31	.000	278	.156-31	.000	279	.175-01	.000	280	.194-31	.000
281	.226-31	.000	282	.258-31	.000	283	.299-01	.000	284	.345-31	.000
285	.405-31	.000	286	.479-31	.000	287	.532-01	.000	288	.592-31	.000
289	.947-31	.000	290	.135-33	.000	291	.133-00	.000	292	.173-30	.000
293	.224-30	.000	294	.314-33	.000	295	.450-00	.000	296	.594-30	.000
297	.140-01	.000	298	.226-01	.000	299	.633-01	.000	300	.197-32	.000
301	.630-31	.000	302	.226-31	.000	303	.114-01	.000	304	.594-30	.000
305	.450-00	.000	306	.314-33	.000	307	.229-00	.000	308	.173-30	.000
309	.133-30	.000	310	.175-33	.000	311	.447-01	.000	312	.592-31	.000
313	.572-31	.000	314	.479-31	.000	315	.435-01	.000	316	.345-31	.000
317	.290-31	.000	318	.258-31	.000	319	.225-01	.000	320	.179-31	.000
321	.175-31	.000	322	.156-31	.000	323	.133-01	.000	324	.125-31	.000
325	.112-31	.000	326	.131-31	.000	327	.923-02	.000	328	.939-32	.000
329	.765-32	.000	330	.730-32	.000	331	.643-02	.000	332	.592-32	.000
333	.547-32	.000	334	.536-32	.000	335	.469-02	.000	336	.435-32	.000
337	.405-32	.000	338	.376-32	.000	339	.353-02	.000	340	.330-32	.000
341	.309-32	.000	342	.290-32	.000	343	.273-02	.000	344	.257-32	.000
345	.242-32	.000	346	.229-32	.000	347	.215-02	.000	348	.204-32	.000
349	.193-32	.000	350	.183-32	.000	351	.174-02	.000	352	.155-32	.000
353	.157-32	.000	354	.150-32	.000	355	.143-02	.000	356	.135-32	.000
357	.130-32	.000	358	.124-32	.000	359	.119-02	.000	360	.113-32	.000
361	.108-32	.000	362	.134-32	.000	363	.975-03	.000	364	.954-33	.000

Table A-1. First Output (Continued)

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.4350-03	.2525-00	.1611-00	.2305-30	.1717-30
.1225-01	.2253-31	.2138-03	.5328-31	.3935-33
.1405-00	.1712-01	.7438-01	.2582-37	.1233-03
.8298-31	.2904-02	.1297-03	.1595-31	.3753-01
.4354-01	.4995-01	.2795-03	.1544-33	.5232-01
.6398-32	.1314-00	.2439-03	.2219-30	.3547-01
.1274-01	.1220-00	.2139-03	.1443-30	.1254-33
.1977-03	.6726-01	.4433-31	.1365-33	.1313-03
.4398-32	.2251-03	.1839-01	.1775-30	.5922-01
.6747-01	.2333-00	.2243-03	.2797-30	.1534-03
.3431-01	.2506-30	.1995-03	.3771-31	.3211-03
.6127-31	.6788-31	.1824-03	.1352-33	.1478-33
.3681-30	.9594-01	.8479-01	.2342-30	.2453-03
.5439-32	.3212-00	.1135-01	.7526-31	.8399-33
.3752-03	.2231-00	.8232-01	.2594-30	.3533-00
.2567-01	.1413-00	.1099-03	.2435-33	.2739-00
.2549-33	.1927-00	.2873-00	.1233-30	.1540-00
.1921-01	.0267-01	.1805-00	.5959-32	.1847-03
.1355-00	.2043-00	.3394-00	.1173-30	.1847-03
.4120-00	.1922-00	.1639-03	.2425-30	.3213-03
.1415-02	.2279-30	.1583-03	.2575-30	.5655-01
.1214-00	.6529-01	.1993-00	.4353-30	.2119-33
.4132-30	.2500-01	.1956-00	.4933-33	.1024-03
.1772-00	.2410-00	.4935-00	.9933-32	.2535-03
.6228-33	.1374-00	.7331-02	.2332-33	.5237-00
.2412-30	.1530-00	.7094-01	.4303-30	.1192-32
.3250-00	.1193-01	.2337-31	.4375-31	.3225-01
.1795-00	.2985-00	.1991-03	.3232-30	.3233-01
.4321-03	.1368-00	.2193-00	.2332-30	.1792-03
.1353-01	.1502-00	.2437-01	.2355-33	.1739-03
.3532-00	.5739-01	.4774-03	.5500-30	.4625-03
.1939-00	.1558-33	.1572-03	.5365-31	.1992-03
.6370-00	.4720-33	.1863-01	.2233-30	.2717-03
.1378-00	.7179-00	.6357-03	.3327-30	.3279-03
.1235-30	.6555-03	.2679-00	.5533-33	.5199-33
.2922-00	.1753-00	.5829-01	.5752-30	.9113-03
.3155-03	.3424-00	.2691-33	.5373-30	.3499-31
.2233-03	.3943-00	.2643-01	.9277-30	.1733-31
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.1533-00	.1316-01	.5365-00	.1355-30	.7759-31
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.6537-00	.1226-01	.7151-03	.1757-30	.7219-33
.9771-30	.6103-30	.4343-03	.3317-30	.3553-01
.3344-30	.2214-00	.1159-01	.7351-30	.4011-03
.2523-30	.1319-01	.5575-03	.5244-30	.3447-03
.1113-31	.3939-00	.9113-03	.3524-30	.1254-30
.6249-00	.5770-01	.4703-03	.7517-31	.7131-03
.1245-31	.1766-31	.2399-31	.1393-30	.1279-33
.1233-01	.1948-31	.2337-01	.3371-31	.5523-31
.3053-01	.4323-01	.1476-01	.4505-31	.4137-00
.4799-31	.3300	.6325-30	.2319-31	.1559-03
.1453-31	.4323-01	.5475-31	.1589-32	.3700
				.1559-03

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Table A-1. First Output (Continued)

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..6049.00	..5773.01	..9793.70	..1093.00	..1589.01	..1773.00
..1113.01	..3939.00	..9113.00	..9517.01	..1243.01	..9101.00
..2529.00	..1319.01	..5576.00	..3524.00	..7339.00	..1254.00
..3394.00	..3214.00	..1189.01	..5493.00	..9267.00	..9447.00
..9771.00	..5303.00	..4369.00	..7551.00	..4921.00	..4011.00
..6537.00	..1226.01	..7151.00	..3317.00	..5179.01	..3553.01
..7595.00	..1134.01	..2559.00	..1757.00	..3973.00	..7219.00
..3952.00	..3539.00	..4295.00	..2724.00	..3440.00	..3252.00
..3633.00	..1036.01	..5365.00	..9278.01	..3927.00	..1325.00
..2452.00	..1305.00	..1239.00	..2931.00	..1955.00	..7053.01
..2203.00	..3943.00	..2693.01	..5369.00	..3354.00	..2113.00
..3155.00	..3424.00	..2681.00	..5090.00	..4777.00	..1739.01
..2922.00	..1763.00	..5029.01	..5752.00	..1377.01	..3493.01
..1295.00	..6965.00	..2679.00	..6599.00	..2347.00	..9113.00
..1379.00	..7179.00	..6357.00	..4337.00	..5563.00	..5179.00
..5370.00	..4260.00	..1459.01	..3029.00	..1253.00	..3274.00
..1939.00	..1594.00	..1572.00	..2233.00	..3314.00	..2717.00
..3570.00	..5799.01	..4774.00	..2905.00	..5565.01	..1932.00
..1953.01	..1592.00	..2407.01	..1539.00	..5500.00	..4535.00
..4021.00	..1358.00	..2197.00	..2555.00	..2132.00	..1779.00
..1739.00	..2995.00	..1961.00	..3242.00	..2691.00	..1792.00
..3250.00	..1193.01	..2337.01	..4373.01	..1349.00	..3233.01
..2412.00	..1500.00	..7094.01	..4431.00	..2593.01	..3225.00
..6229.00	..1374.00	..7331.02	..4039.00	..1192.02	..7235.01
..1772.00	..2410.00	..4935.00	..2972.00	..1435.00	..5257.00
..4152.00	..2600.01	..1965.00	..9939.02	..1317.00	..2536.00
..1214.00	..5529.01	..1995.00	..4559.00	..4729.00	..1724.00
..1445.02	..2279.00	..1563.00	..1230.00	..4050.00	..2113.00
..4100.00	..1902.00	..1639.00	..2925.00	..2575.00	..5555.01
..1355.00	..2043.00	..3394.00	..1193.00	..2829.00	..3219.00
..3991.01	..8267.01	..1846.00	..6959.02	..4302.01	..1449.00
..2540.00	..1927.00	..2873.00	..1799.00	..1477.00	..1543.00
..2567.01	..1413.00	..1099.00	..2705.00	..1285.01	..2547.00
..3752.00	..2231.00	..3232.01	..2394.00	..1145.01	..3353.00
..5439.02	..3212.00	..4135.01	..7525.01	..2712.00	..4399.00
..3591.00	..9594.01	..4474.01	..2139.00	..2942.00	..2453.00
..6127.01	..2586.00	..1824.00	..1852.00	..4424.01	..1479.00
..3431.01	..2586.00	..1945.00	..5995.02	..3771.01	..3211.00
..4399.02	..2333.00	..2444.00	..1797.00	..2751.00	..1534.00
..1977.00	..2261.00	..1439.01	..3911.01	..1975.00	..5922.01
..1274.01	..6726.01	..4413.01	..1854.00	..1365.00	..1013.00
..6399.02	..1220.00	..2133.00	..2319.00	..1440.00	..1325.00
..4354.01	..1714.00	..2439.00	..2250.00	..2719.00	..3547.01
..4096.01	..9995.01	..2795.00	..1544.00	..1543.01	..5232.01
..1405.00	..2904.02	..1297.00	..2457.00	..1545.01	..9759.01
..1025.01	..7712.01	..9435.01	..7239.01	..2642.00	..1293.00
..4050.00	..9253.01	..2134.00	..3539.00	..5374.01	..3995.00
..1159.00	..2525.00	..1611.00	..9759.02	..2805.00	..1717.00
..4993.01	..1313.00	..2013.00	..1552.00	..2233.00	..1410.00
..5035.01	..3137.00	..1405.01	..1499.00	..1307.00	..7450.01
..7105.02	..3725.01	..2267.01	..4545.01	..1595.00	..1494.00
..3222.00	..2190.00	..6393.01	..5344.01	..5772.01	..5551.01
..1909.00	..1930.00	..1371.00	..9091.01	..2347.00	..2829.00
	..1079.00	..3013.01	..6127.01	..1492.00	..1695.00

Table A-1. First Output (Concluded)

-.9355-01	-.2572+00	-.1955+00	-.3331-01	-.5339-01	.1723-01
-.6989-01	.4173-01	.1351+00	.5125-01	-.5173-01	.5059-01
-.2655-01	.1764+00	-.6395-01	.1331+00	-.5793-01	.5711-01
-.3531-01	.2344+00	.3623-01	-.9224-01	.5392-01	.3629-01
-.1791+00	-.2736+00	.4439-01	-.1593+00	-.1315+00	.1035+00
.3510+00	.7065-01	-.6825-01	.2564+01	-.5427-01	.1323+00
-.1327+00	.1357+02	-.1493+00	.6535-01	-.1270+00	.5975-01
-.4620-01	.1074+00	-.0339+02	-.5353-01	-.0934+01	.3554+00
.1963+00	.1672+00	-.1019+00	.1219+00	.3544+01	.1472+00
.5190-01	.2925+00	.9019-01	.1707+00	-.2141+00	.1554-01
-.7735-01	.1135+00	.2231-01	-.5553-01	.9504+01	-.1953+00
-.5995-01	-.0498-01	-.2059+00	-.1743+00	-.0419-01	.1674-02
-.2280+00	-.7356-01	.2682-01	-.1145+02	-.1731+00	.1144+00
.1749+00	.1958-01	-.9773-01	.1531+00	-.1732+00	.1544+00
.3269-01	-.1447+00	.1289+00	.7433-01	-.9233-01	.9165-02
.4695-01	.2224-01	-.3909-01	.1351+00	-.1217+00	-.4472-01
-.3434-01	.3241-01	-.9477-01	.1523-01	-.1303-01	.5933-01
.1313+00	-.4403-01	.1855-01	.7455-01	-.1340+00	-.4753-01
-.2529+00	.7397-01	-.6353-01	-.4169-01	-.7257-01	.1132+00
.4154-01	-.2216+00	.5019-01	-.2243+00	.9745-01	.4400+02
-.9927-01	-.9640-01	.4337+03	.7530-01	-.1309+00	-.2059+00
.2373+00	.9596-01	-.9975-01	.3731-01	.3499-01	.9252-01
-.2330-01	.1561+00	.4635-02	.1271+00	-.5201-01	.1290+00
-.1523+00	.1164+00	.6744-01	-.1574+00	-.5719-01	-.1279+00
-.1158+00	-.5943-01	.2029+00	-.9289-01	.5393-01	-.2443-01
-.1337+00	-.4174-01	.9501-01	.2932-01	-.1344+00	.3311-01
-.3599-01	.3510-01	-.5032-01	-.4253+02	.2013-01	.1134+00
.6739-01	-.3297-01	.8112-01	.1453+00	.3135-01	.9429-01
-.1027+00	-.1910+00	-.1734+00	-.9175+02	-.2395-01	-.7421-01
-.1010-01	-.1502-01	.9305+02	.1449+00	.5163-01	-.1907+02
.4274-02	-.5194-01	.1373+00	-.5275-01	.2215-01	-.9943-01
-.4551-01	-.1311+00	-.2462-01	.6739-01	.1392-01	-.9123-01
-.1244+00	.4093-01	.7091-01	-.4373-01	-.9443-01	-.5506-01
-.5599-01	-.7545-01	.1225+00	-.1432+00	-.9355+02	-.7237-01
-.1950+00	.1269+00	.1027+00	.1332-01	.9342+02	-.1042+00
-.7073-02	-.1242+00	-.1394+00	.4353-01	.3593-01	-.5012-01
.1925-01	-.1110+00	-.5425-01	.1301-01	-.1357+00	-.9984+02
-.1124-01	.1117+00	.7432-01	-.1533+00	-.2312+02	.3800-01
.5517-01	-.2530-01	-.4019-01	.5321-01	-.7350-01	-.3574-01
-.2167-01	.5906-01	.2624-01	-.2710-01	-.7350+02	.5077-01
.1076+00	-.2594-01	.1137+00	.2136-01	-.5595-01	-.1554+00
.5593-02	.1133+00	-.1369+00	-.4755-01	-.1272+00	.7453-01

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Table A-2. Second Output

KP	X	Z	J	V	I
1	.0000000	.1200000+04	-.1377698+02	-.1293931+01	.1343826+02
2	.1000000+03	.1200000+04	-.1455656+02	.9753345+00	.1532009+02
3	.2000000+03	.1200000+04	-.1285410+02	.3057348+01	.2155997+02
4	.3000000+03	.1200000+04	-.1172807+02	.4925690+01	.2344057+02
5	.4000000+03	.1200000+04	-.1024376+02	.3225855+01	.2153991+02
6	.5000000+03	.1200000+04	-.9972147+01	-.1394359+01	.1759937+02
7	.6000000+03	.1200000+04	-.1250759+02	-.1398600+01	.1492919+02
8	.7000000+03	.1200000+04	-.1190853+02	-.3453139+00	.1679901+02
9	.8000000+03	.1200000+04	-.4392376+01	-.2974483+01	.1913077+02
10	.9000000+03	.1200000+04	.6343911+00	-.6161973+01	.1998888+02
11	.1000000+04	.1200000+04	-.2920559+01	-.4778006+01	.2413341+02
12	.1100000+04	.1200000+04	-.7517681+01	.1345872+01	.2997589+02
13	.1200000+04	.1200000+04	-.9503319+01	.3515225+01	.2542700+02
14	.1300000+04	.1200000+04	-.1163031+02	.5482769+01	.2171635+02
15	.1400000+04	.1200000+04	-.1335900+02	.4379347+01	.1931483+02
16	.1500000+04	.1200000+04	-.1348719+02	-.1100542+01	.1587274+02
17	.1600000+04	.1200000+04	-.1455683+02	-.4358555+01	.1176499+02
18	.1700000+04	.1200000+04	-.1531490+02	-.2204582+01	.1339527+02
19	.1800000+04	.1200000+04	-.1342732+02	.1565847+01	.1522994+02
20	.1900000+04	.1200000+04	-.1433975+02	.4711325+01	.1413859+02
21	.2000000+04	.1200000+04	-.1953435+02	.6008289+01	.1025323+02
22	.2100000+04	.1200000+04	-.1840015+02	.6421137+01	.7814713+01
23	.2200000+04	.1200000+04	-.1432407+02	.4501955+01	.5191575+01
24	.2300000+04	.1200000+04	-.1394811+02	.7005665+01	.2915905+01
25	.2400000+04	.1200000+04	-.1458022+02	.1331664+02	.1513931+01
26	.2500000+04	.1200000+04	-.1157954+02	.1702317+02	-.7153235+00
27	.2600000+04	.1200000+04	-.9541857+01	.1505199+02	-.2446670+01
28	.2700000+04	.1200000+04	-.1054943+02	.1350261+02	.3799644+00
29	.2800000+04	.1200000+04	-.1014100+02	.1133041+02	.5879409+01
30	.2900000+04	.1200000+04	-.7362016+01	.1011689+02	.8092919+01
31	.3000000+04	.1200000+04	-.6000759+01	.1228975+02	.5513917+01
32	.3100000+04	.1200000+04	-.5368930+01	.1710142+02	.3129557+01
33	.3200000+04	.1200000+04	-.3753289+01	.1985678+02	.4526321+01
34	.3300000+04	.1200000+04	-.3051942+01	.1738625+02	.5968624+01
35	.3400000+04	.1200000+04	-.3949905+01	.1958757+02	.3923256+01
36	.3500000+04	.1200000+04	-.4541195+01	.1587035+02	.7102827+01
37	.3600000+04	.1200000+04	-.5190791+01	.1253605+02	.2782680+01
38	.3700000+04	.1200000+04	-.7387290+01	.9799786+01	.1974479+01
39	.3800000+04	.1200000+04	-.8993452+01	.1076593+02	-.4229070+00
40	.3900000+04	.1200000+04	-.6690157+01	.9700300+01	-.2012098+01
41	.4000000+04	.1200000+04	-.1912507+01	.6599845+01	-.2354430+01
42	.4100000+04	.1200000+04	.4754876+00	.9085632+01	-.3729979+01
43	.4200000+04	.1200000+04	-.1484343+01	.1448074+02	-.4851435+01
44	.4300000+04	.1200000+04	-.5695256+01	.1330694+02	-.6129085+01
45	.4400000+04	.1200000+04	-.8772752+01	.9462973+01	-.8421026+01
46	.4500000+04	.1200000+04	-.7345829+01	.1157089+02	-.7134391+01
47	.4600000+04	.1200000+04	-.1589640+01	.1453440+02	-.7579326+01
48	.4700000+04	.1200000+04	.2246679+01	.1100573+02	-.6753356+01
49	.4800000+04	.1200000+04	.3309431+00	.5493213+01	-.7500741+01
50	.4900000+04	.1200000+04	-.2091052+01	.4066614+01	-.7574773+01
51	.5000000+04	.1200000+04	.3179012+00	.5006480+01	-.4452529+01
52	.5100000+04	.1200000+04	.4153491+01	.8509950+01	.1409458+01
53	.5200000+04	.1200000+04	.5554350+01	.1096260+02	.4229141+01
54	.5300000+04	.1200000+04	.6212049+01	.1146198+02	.9375000+00
55	.5400000+04	.1200000+04	.7030290+01	.1044862+02	-.2156972+01
56	.5500000+04	.1200000+04	.6305772+01	.9501229+01	-.8905303+00
57	.5600000+04	.1200000+04	.4528504+01	.6514406+01	.4091350+00
58	.5700000+04	.1200000+04	.3757208+01	.5527307+01	-.2549239+00
59	.5800000+04	.1200000+04	.3771358+01	.5875459+01	-.1992405+01
60	.5900000+04	.1200000+04	.5132959+01	.5758725+01	-.6292454+01
61	.6000000+04	.1200000+04	.8508932+01	.5508985+01	-.9513401+01
62	.6100000+04	.1200000+04	.1263322+02	.4377749+01	-.6754857+01
63	.6200000+04	.1200000+04	.1558858+02	.2114439+01	-.4951074+01
64	.6300000+04	.1200000+04	.2066176+02	-.4715469+00	-.9305939+01
65	.6400000+04	.1200000+04	.2302529+02	.1892648+01	-.1046537+02
66	.6500000+04	.1200000+04	.2144045+02	.7762509+01	-.4709610+01

Table A-2. Second Output (Continued)

67	.66300000+04	.12000000+04	.1780258+02	.1135291+02	-.1113992+01
68	.57300000+04	.12000000+04	.1543924+02	.1327699+02	-.6354402+00
69	.63300000+04	.12000000+04	.1523895+02	.1314231+02	-.7625933+01
70	.69300000+04	.12000000+04	.1741699+02	.1397306+02	.5833324+01
71	.73300000+04	.12000000+04	.2139314+02	.1794795+02	.4859145+01
72	.71300000+04	.12000000+04	.2155058+02	.1735419+02	.2111057+01
73	.72300000+04	.12000000+04	.1832654+02	.1519937+02	-.1333457+01
74	.73300000+04	.12000000+04	.1595152+02	.1533637+02	-.5017742+01
75	.74300000+04	.12000000+04	.2357937+02	.1332074+02	-.7449835+01
76	.75300000+04	.12000000+04	.2222839+02	.6315040+01	-.1045738+02
77	.76300000+04	.12000000+04	.1915235+02	.5274695+01	-.1355175+02
78	.77300000+04	.12000000+04	.1425391+02	.3979796+01	-.1197719+02
79	.79300000+04	.12000000+04	.1297754+02	.2493122+01	-.9314450+01
80	.79300000+04	.12000000+04	.1146922+02	.2535523+01	-.1334115+02
81	.83300000+04	.12000000+04	.1343742+02	-.1154532+01	-.1331734+02
82	.81300000+04	.12000000+04	.1377641+02	-.6483039+01	-.1155633+02
83	.82300000+04	.12000000+04	.9253633+01	-.8440100+01	-.8327059+01
84	.83300000+04	.12000000+04	.5937065+01	-.7931730+01	-.6559976+01
85	.84300000+04	.12000000+04	.5274334+01	-.1339513+02	-.3213627+01
86	.85300000+04	.12000000+04	.7449593+01	-.1213279+02	-.1787573+02
87	.86300000+04	.12000000+04	.9533553+01	-.1335255+02	-.1748484+01
88	.87300000+04	.12000000+04	.1235893+02	-.8523653+01	-.5955897+01
89	.88300000+04	.12000000+04	.1393855+02	-.9513245+01	-.7353598+01
90	.89300000+04	.12000000+04	.1173739+02	-.9153879+01	-.5855407+01
91	.90300000+04	.12000000+04	.7531543+01	-.9492251+01	-.7293334+01
92	.91300000+04	.12000000+04	.5942374+01	-.1332923+02	-.1197635+02
93	.92300000+04	.12000000+04	.6421159+01	-.1365167+02	-.1534937+02
94	.93300000+04	.12000000+04	.5655197+01	-.1151409+02	-.1575353+02
95	.94300000+04	.12000000+04	.4155153+01	-.1325535+02	-.1622939+02
96	.95300000+04	.12000000+04	.4977939+01	-.1494439+02	-.1651753+02
97	.96300000+04	.12000000+04	.8856354+01	-.1233376+02	-.1383759+02
98	.97300000+04	.12000000+04	.1345799+02	-.1167638+02	-.1312337+02
99	.98300000+04	.12000000+04	.1533629+02	-.1532945+02	-.7413943+01
100	.99300000+04	.12000000+04	.1754874+02	-.1377979+02	-.3437257+01
101	.10000000+05	.12000000+04	.1903930+02	-.9346297+01	.8522423+02
102	.10100000+05	.12000000+04	.1533259+02	-.5135156+01	.9553735+02
103	.10200000+05	.12000000+04	.1319959+02	-.2343435+01	-.3395535+01
104	.10300000+05	.12000000+04	.1222392+02	.1534231+01	-.9195775+01
105	.10400000+05	.12000000+04	.1343039+02	.4713343+01	-.1297297+02
106	.10500000+05	.12000000+04	.1373642+02	-.1941537+01	-.1122339+02
107	.10600000+05	.12000000+04	.1343212+02	.4553741+01	-.5473155+01
108	.10700000+05	.12000000+04	.1423950+02	.4542463+01	-.5237754+01
109	.10800000+05	.12000000+04	.1493293+02	.6925599+01	-.5759898+01
110	.10900000+05	.12000000+04	.1494932+02	.8444373+01	-.3373659+01
111	.11000000+05	.12000000+04	.1461201+02	.7323556+01	-.8424417+01
112	.11100000+05	.12000000+04	.1399927+02	.3973323+01	-.3333756+01
113	.11200000+05	.12000000+04	.4263570+01	-.5573089+01	-.6293274+01
114	.11300000+05	.12000000+04	.3712523+01	-.2999930+01	-.5935945+01
115	.11400000+05	.12000000+04	.1395347+02	-.1554382+01	-.4343915+01
116	.11500000+05	.12000000+04	.1355537+02	.2862284+01	-.4464024+01
117	.11600000+05	.12000000+04	.8192475+01	.5534865+01	-.5735252+01
118	.11700000+05	.12000000+04	.7334349+01	.4483282+01	-.3473179+01
119	.11800000+05	.12000000+04	.1295795+02	.2597568+01	.7319333+01
120	.11900000+05	.12000000+04	.1455916+02	.1777265+01	.4093240+01
121	.12000000+05	.12000000+04	.1157235+02	.2933796+01	-.2487015+01
122	.12100000+05	.12000000+04	.1332299+02	.6533361+01	-.5935723+01
123	.12200000+05	.12000000+04	.1833531+02	.7365491+01	-.2397536+01
124	.12300000+05	.12000000+04	.1955394+02	.3273215+01	-.4393634+01
125	.12400000+05	.12000000+04	.1977112+02	.2993919+01	.3425599+01
126	.12500000+05	.12000000+04	.1855559+02	.3239239+01	.1943027+01
127	.12600000+05	.12000000+04	.1851713+02	.4882491+01	.6636333+01
128	.12700000+05	.12000000+04	.2329234+02	.3394765+01	-.7633117+01
129	.12800000+05	.12000000+04	.3214735+02	.4793322+01	-.1924397+01
130	.12900000+05	.12000000+04	.1942257+02	.7273637+01	.8725525+01
131	.13000000+05	.12000000+04	.1593375+02	.4855539+01	.7543857+01
132	.13100000+05	.12000000+04	.1553197+02	.6535459+01	.5579613+01

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Table A-2. Second Output (Continued)

133	.1320000+05	.1200000+04	.1527915+02	-.1112430+01	.6777672+00
134	.1330000+05	.1200000+04	.1243233+02	-.3520070+01	.2414456+00
135	.1340000+05	.1200000+04	.1353652+02	-.6375529+01	.2825176+01
136	.1350000+05	.1200000+04	.9209415+01	-.6443621+01	.4695525+01
137	.1360000+05	.1200000+04	.4843339+01	-.4033046+01	-.7160139+00
138	.1370000+05	.1200000+04	.4330653+01	-.5215045+01	-.5294721+01
139	.1380000+05	.1200000+04	.9655652+01	-.6546462+01	-.1425135+01
140	.1390000+05	.1200000+04	.1376142+02	-.2318763+01	.2955647+01
141	.1400000+05	.1200000+04	.6450356+01	.1790339+01	.3553942+01
142	.1410000+05	.1200000+04	.4899815+01	-.5540221+00	.5899136+01
143	.1420000+05	.1200000+04	.5258913+01	-.2391533+01	.7341959+01
144	.1430000+05	.1200000+04	.3018251+01	.1425930+00	.4487199+01
145	.1440000+05	.1200000+04	.2758157+00	.1572669+01	.1852422+01
146	.1450000+05	.1200000+04	-.2479745+01	-.1307934+01	-.7625135+00
147	.1460000+05	.1200000+04	-.6241955+01	-.2560272+01	-.5347353+01
148	.1470000+05	.1200000+04	-.8232463+01	-.2114475+01	-.6095730+01
149	.1480000+05	.1200000+04	-.7553505+01	-.4839515+01	-.3205077+01
150	.1490000+05	.1200000+04	-.6819370+01	-.8431135+01	-.3851239+01
151	.1500000+05	.1200000+04	-.4602232+01	-.1005822+02	-.4147534+01
152	.1510000+05	.1200000+04	-.1305073+01	-.1180284+02	.1794539+01
153	.1520000+05	.1200000+04	-.4576634+00	-.1254675+02	.7047349+01
154	.1530000+05	.1200000+04	.2448356+00	-.1031629+02	.6825456+01
155	.1540000+05	.1200000+04	.4131174+01	-.8439719+01	.5394273+01
156	.1550000+05	.1200000+04	.6172074+01	-.8429028+01	.3484481+01
157	.1560000+05	.1200000+04	.3777144+01	-.8330768+01	.1121544+01
158	.1570000+05	.1200000+04	.4484189+01	-.8894909+01	.1900825+01
159	.1580000+05	.1200000+04	.1202159+02	-.9562992+01	.3119300+01
160	.1590000+05	.1200000+04	.1835232+02	-.7831656+01	.5951014+00
161	.1600000+05	.1200000+04	.1587179+02	-.5705444+01	-.7897083+00
162	.1610000+05	.1200000+04	.9085679+01	-.6475337+01	.2174028+01
163	.1620000+05	.1200000+04	.8537159+01	-.7785555+01	.4892719+01
164	.1630000+05	.1200000+04	.1439959+02	-.8339434+01	.6053211+01
165	.1640000+05	.1200000+04	.1538489+02	-.9351731+01	.7547815+01
166	.1650000+05	.1200000+04	.1259519+02	-.1045349+02	.8082456+01
167	.1660000+05	.1200000+04	.1160995+02	-.1358542+02	.7512829+01
168	.1670000+05	.1200000+04	.1346454+02	-.2015729+02	.7420973+01
169	.1680000+05	.1200000+04	.1251750+02	-.2372522+02	.5625447+01
170	.1690000+05	.1200000+04	.1313499+02	-.2070325+02	.2152704+01
171	.1700000+05	.1200000+04	.8077504+01	-.1725750+02	.2652115+00
172	.1710000+05	.1200000+04	.3793418+01	-.1533629+02	.5707145+01
173	.1720000+05	.1200000+04	-.1833290+00	-.1520685+02	.1934699+00
174	.1730000+05	.1200000+04	-.5259654+00	-.1364297+02	.1485130+01
175	.1740000+05	.1200000+04	-.2955677+00	-.2112345+02	.3454133+01
176	.1750000+05	.1200000+04	.5742445+00	-.1743633+02	.4633317+01
177	.1760000+05	.1200000+04	.3705190+01	-.1228695+02	.4932413+01
178	.1770000+05	.1200000+04	.2524347+01	-.1221230+02	.3641245+01
179	.1780000+05	.1200000+04	-.4785500+01	-.1094711+02	.1037745+01
180	.1790000+05	.1200000+04	-.8309187+01	-.4685362+01	-.3080351+00
181	.1800000+05	.1200000+04	-.6311423+01	-.1649505+01	-.1042749+01
182	.1810000+05	.1200000+04	-.6013855+01	-.5398807+01	-.3155557+01
183	.1820000+05	.1200000+04	-.5254923+01	-.1041884+02	-.3453182+01
184	.1830000+05	.1200000+04	-.7875699+00	-.1358706+02	.3785330+01
185	.1840000+05	.1200000+04	.5324730+00	-.1565523+02	.2948271+01
186	.1850000+05	.1200000+04	-.2527629+01	-.1795565+02	.3994854+01
187	.1860000+05	.1200000+04	-.1836234+01	-.2024519+02	.5574267+01
188	.1870000+05	.1200000+04	.2855242+01	-.1917746+02	.4654728+01
189	.1880000+05	.1200000+04	.5315787+01	-.1592438+02	-.1133710+01
190	.1890000+05	.1200000+04	.4415956+01	-.1548134+02	-.4489448+01
191	.1900000+05	.1200000+04	.1122013+01	-.1817044+02	-.1534511+01
192	.1910000+05	.1200000+04	-.3109471+01	-.1324807+02	.3453500+01
193	.1920000+05	.1200000+04	-.3511222+01	-.7757759+01	.4708951+01
194	.1930000+05	.1200000+04	.3378057+00	-.1080047+02	.5497692+01
195	.1940000+05	.1200000+04	.2972195+01	-.1502132+02	.7811859+01
196	.1950000+05	.1200000+04	.9004273+00	-.1378306+02	.6775876+01
197	.1960000+05	.1200000+04	-.3317555+01	-.1134989+02	.1005229+01
198	.1970000+05	.1200000+04	-.6588420+01	-.1059721+02	-.2217954+01

Table A-2. Second Output (Continued)

199	.1990000+05	.1200000+04	-.5921791+01	-.1077905+02	.7894773+00
200	.1990000+05	.1200000+04	-.1719025+01	-.1253599+02	.3231535+01
201	.2000000+05	.1200000+04	.5822337+00	-.1312941+02	.3597445+00
202	.2010000+05	.1200000+04	-.1588032+01	-.1056077+02	-.3104945+01
203	.2020000+05	.1200000+04	-.3536074+01	-.9414032+01	-.4029375+01
204	.2030000+05	.1200000+04	-.1395449+01	-.1113405+02	-.5559035+01
205	.2040000+05	.1200000+04	.1715850+01	-.1201702+02	-.8291993+01
206	.2050000+05	.1200000+04	.8567151+00	-.1249539+02	-.9548879+01
207	.2060000+05	.1200000+04	-.3312886+01	-.1277305+02	-.1027932+02
208	.2070000+05	.1200000+04	-.5566157+01	-.9940755+01	-.1282957+02
209	.2080000+05	.1200000+04	-.3942013+01	-.7032914+01	-.1611662+02
210	.2090000+05	.1200000+04	-.2011927+01	-.7345833+01	-.1808635+02
211	.2100000+05	.1200000+04	-.4319445+01	-.6100463+01	-.1908435+02
212	.2110000+05	.1200000+04	-.1028001+02	-.2527894+01	-.1633754+02
213	.2120000+05	.1200000+04	-.1466342+02	-.1620237+01	-.1422001+02
214	.2130000+05	.1200000+04	-.1295888+02	-.9523063+00	-.1297629+02
215	.2140000+05	.1200000+04	-.8281796+01	.1514051+01	-.1235950+02
216	.2150000+05	.1200000+04	-.8539950+01	-.8155307+00	-.1241894+02
217	.2160000+05	.1200000+04	-.1278184+02	-.6972634+01	-.1310977+02
218	.2170000+05	.1200000+04	-.1427029+02	-.8419290+01	-.1237421+02
219	.2180000+05	.1200000+04	-.1340635+02	-.7974310+01	-.9837297+01
220	.2190000+05	.1200000+04	-.1487170+02	-.1117024+02	-.8939173+01
221	.2200000+05	.1200000+04	-.1862259+02	-.1148505+02	-.1022132+02
222	.2210000+05	.1200000+04	-.2244724+02	-.6027424+01	-.9237374+01
223	.2220000+05	.1200000+04	-.2337079+02	-.2775055+01	-.5325405+01
224	.2230000+05	.1200000+04	-.1744891+02	-.2427952+01	-.3419854+01
225	.2240000+05	.1200000+04	-.7307939+01	.9412202+00	-.4390949+01
226	.2250000+05	.1200000+04	-.2967171+01	.4323924+01	-.3911940+01
227	.2260000+05	.1200000+04	-.4070477+01	.3030415+01	-.1635601+01
228	.2270000+05	.1200000+04	-.7419071+01	.1352650+01	-.2094531+01
229	.2280000+05	.1200000+04	-.1208989+02	.1737725+01	-.4741523+01
230	.2290000+05	.1200000+04	-.1473921+02	-.5527481+00	-.5592350+01
231	.2300000+05	.1200000+04	-.1278751+02	-.5362193+01	-.4703443+01
232	.2310000+05	.1200000+04	-.1231139+02	-.5967279+01	-.4452939+01
233	.2320000+05	.1200000+04	-.1527955+02	-.2033325+00	-.4760971+01
234	.2330000+05	.1200000+04	-.1372202+02	.7070143+01	-.4749146+01
235	.2340000+05	.1200000+04	-.8476632+01	.1240170+02	-.3746757+01
236	.2350000+05	.1200000+04	-.8572053+01	.1448293+02	-.7072907+00
237	.2360000+05	.1200000+04	-.1117563+02	.1366256+02	.2497996+01
238	.2370000+05	.1200000+04	-.8961417+01	.1318131+02	.1793541+01
239	.2380000+05	.1200000+04	-.6344945+01	.1420986+02	-.2202146+01
240	.2390000+05	.1200000+04	-.8288940+01	.1333449+02	-.4719423+01
241	.2400000+05	.1200000+04	-.1053663+02	.1158742+02	-.3114105+01
242	.2410000+05	.1200000+04	-.9694725+01	.1417481+02	.1961616+01
243	.2420000+05	.1200000+04	-.7473413+01	.1742603+02	.6963216+01
244	.2430000+05	.1200000+04	-.6830895+01	.1424461+02	.6870645+01
245	.2440000+05	.1200000+04	-.9886307+01	.9752435+01	.2256391+01
246	.2450000+05	.1200000+04	-.1344481+02	.1069956+02	-.1297963+01
247	.2460000+05	.1200000+04	-.1212113+02	.1193749+02	-.4267099+01
248	.2470000+05	.1200000+04	-.8639116+02	.1068323+02	-.1054683+02
249	.2480000+05	.1200000+04	-.8418233+01	.1254417+02	-.1500416+02
250	.2490000+05	.1200000+04	-.7833615+01	.1561094+02	-.1114054+02
251	.2500000+05	.1200000+04	-.4681095+01	.1427809+02	-.5057322+01
252	.2510000+05	.1200000+04	-.5226167+01	.1359765+02	-.4951547+01
253	.2520000+05	.1200000+04	-.8996572+01	.1710093+02	-.7321772+01
254	.2530000+05	.1200000+04	-.7586857+01	.1720040+02	-.6371659+01
255	.2540000+05	.1200000+04	-.2805447+01	.1158412+02	-.4015797+01
256	.2550000+05	.1200000+04	-.3146985+01	.9181364+01	-.3137334+01
257	.2560000+05	.1200000+04	-.6050907+01	.9495143+01	-.3269459+01
258	.2570000+05	.1200000+04	-.4056916+01	.1232329+02	-.4832274+01
259	.2580000+05	.1200000+04	-.5829636+00	.1446732+02	-.4174193+01
260	.2590000+05	.1200000+04	-.2301946+01	.1505670+02	-.1093102+02
261	.2600000+05	.1200000+04	-.5589905+01	.1527039+02	-.1202770+02
262	.2610000+05	.1200000+04	-.4523326+01	.1587405+02	-.1299414+02
263	.2620000+05	.1200000+04	-.2923963+01	.1308029+02	-.1347757+02
264	.2630000+05	.1200000+04	-.5689795+01	.7389844+01	-.1248481+02

Table A-2. Second Output (Continued)

265	.2640000+05	.1200000+04	-.9353879+01	.7375189+01	-.1299072+02
266	.2650000+05	.1200000+04	-.5221019+01	.1295189+02	-.1597953+02
267	.2660000+05	.1200000+04	-.2319355+01	.1332609+02	-.2052254+02
268	.2670000+05	.1200000+04	-.3421938+01	.8412125+01	-.1895942+02
269	.2680000+05	.1200000+04	-.5447639+01	.6190881+01	-.1379934+02
270	.2690000+05	.1200000+04	-.2553795+01	.5593307+01	-.1043047+02
271	.2700000+05	.1200000+04	-.2597999+01	.3461553+01	-.1104109+02
272	.2710000+05	.1200000+04	.3352989+01	.3300919+01	-.1329230+02
273	.2720000+05	.1200000+04	-.6670951+00	.7495314+01	-.1297379+02
274	.2730000+05	.1200000+04	-.1929237+00	.8253423+01	-.8825477+01
275	.2740000+05	.1200000+04	.8353672+01	.4323679+01	-.4054159+01
276	.2750000+05	.1200000+04	.1395223+02	.2774344+01	-.1015677+01
277	.2760000+05	.1200000+04	.9291435+01	.2498979+01	.1043021+01
278	.2770000+05	.1200000+04	.2525337+01	.2742630+01	.1551752+01
279	.2780000+05	.1200000+04	-.1994755+00	.4937809+01	-.7117559-01
280	.2790000+05	.1200000+04	-.2574976+01	.7594853+01	-.1385735+01
281	.2800000+05	.1200000+04	-.4529139+01	.6395909+01	.4255179+01
282	.2810000+05	.1200000+04	-.3728017+01	.3313875+01	.3853419+01
283	.2820000+05	.1200000+04	-.4172833+01	.1520020+01	.6209303+01
284	.2830000+05	.1200000+04	-.6144634+01	.1533840+01	.5773295+01
285	.2840000+05	.1200000+04	-.4151550+01	-.8472523+00	.3139110+01
286	.2850000+05	.1200000+04	-.1123133+01	-.4195619+01	.3255949+01
287	.2860000+05	.1200000+04	-.3457996+01	-.4102663+01	.9255817+01
288	.2870000+05	.1200000+04	-.7587511+01	-.2235297+01	.1544119+02
289	.2880000+05	.1200000+04	-.8725635+01	-.3330429+01	.1555699+02
290	.2890000+05	.1200000+04	-.8451335+01	-.5575479+01	.1201833+02
291	.2900000+05	.1200000+04	-.9374399+01	-.4533340+01	.8491130+01
292	.2910000+05	.1200000+04	-.7738952+01	-.1320210+01	.6542691+01
293	.2920000+05	.1200000+04	-.6717449+01	-.4032373+00	.7783934+01
294	.2930000+05	.1200000+04	-.5354939+01	-.1130638+01	.1159655+02
295	.2940000+05	.1200000+04	-.5334713+01	-.3397792+00	.1351412+02
296	.2950000+05	.1200000+04	-.1122678+02	.1295884+01	.1191845+02
297	.2960000+05	.1200000+04	-.1554631+02	.1347741+01	.1052330+02
298	.2970000+05	.1200000+04	-.1584018+02	.2334794+01	.1275632+02
299	.2980000+05	.1200000+04	-.1463308+02	.3195329+01	.1755204+02
300	.2990000+05	.1200000+04	-.1813105+02	.2133575+01	.1952025+02
301	.3000000+05	.1200000+04	-.2099394+02	-.1377938+01	.1565112+02
302	.3010000+05	.1200000+04	-.2096452+02	-.5057369+01	.1108438+02
303	.3020000+05	.1200000+04	-.2159037+02	-.4830752+01	.1149919+02
304	.3030000+05	.1200000+04	-.2029210+02	-.4239594+01	.1413005+02
305	.3040000+05	.1200000+04	-.1365953+02	-.6122746+01	.1421135+02
306	.3050000+05	.1200000+04	-.8025035+01	-.8211693+01	.1239445+02
307	.3060000+05	.1200000+04	-.6682393+01	-.7957981+01	.1351577+02
308	.3070000+05	.1200000+04	-.4532973+01	-.7094402+01	.1692203+02
309	.3080000+05	.1200000+04	-.1357899+01	-.9371737+01	.2023900+02
310	.3090000+05	.1200000+04	-.2003295+01	-.1109321+02	.1973659+02
311	.3100000+05	.1200000+04	-.4317524+01	-.1232771+02	.1893350+02
312	.3110000+05	.1200000+04	-.3487397+01	-.1111521+02	.2397910+02
313	.3120000+05	.1200000+04	-.2738819+01	-.9551386+01	.2841501+02
314	.3130000+05	.1200000+04	-.7135925+01	-.5231027+01	.2257139+02
315	.3140000+05	.1200000+04	-.1315938+02	-.1755911+01	.1403227+02
316	.3150000+05	.1200000+04	-.1472842+02	.6715338+00	.1491635+02
317	.3160000+05	.1200000+04	-.1310315+02	.2595700+01	.2092274+02
318	.3170000+05	.1200000+04	-.1189936+02	.4780645+01	.2345494+02
319	.3180000+05	.1200000+04	-.1049852+02	.3302351+01	.2205213+02
320	.3190000+05	.1200000+04	-.9791142+01	-.4985030+00	.1823421+02
321	.3200000+05	.1200000+04	-.1217701+02	-.2194841+01	.1505419+02
322	.3210000+05	.1200000+04	-.1255302+02	-.4722704+00	.1630370+02
323	.3220000+05	.1200000+04	-.5742719+01	-.1335221+01	.1891290+02
324	.3230000+05	.1200000+04	.4375402+00	-.5910141+01	.1954743+02
325	.3240000+05	.1200000+04	-.1925575+01	-.5374790+01	.2313475+02
326	.3250000+05	.1200000+04	-.7079757+01	-.7392993+01	.2457291+02
327	.3260000+05	.1200000+04	-.9256029+01	.3164420+01	.2751205+02
328	.3270000+05	.1200000+04	-.1123352+02	.5330187+01	.2235503+02
329	.3280000+05	.1200000+04	-.1322825+02	.4519799+01	.1952756+02
330	.3290000+05	.1200000+04	-.1345659+02	-.2138070+00	.1663791+02

Table A-2. Second Output (Continued)

331	.3330000+05	.1200000+04	-.1439645+02	-.4217871+01	.1232429+02
332	.3310000+05	.1200000+04	-.1542327+02	-.2794492+01	.1284795+02
333	.3320000+05	.1200000+04	-.1371827+02	.1100016+01	.1605153+02
334	.3330000+05	.1200000+04	-.1392143+02	.4254698+01	.1475404+02
335	.3340000+05	.1200000+04	-.1926239+02	.6584254+01	.1077334+02
336	.3350000+05	.1200000+04	-.1998979+02	.6703541+01	.8169603+01
337	.3360000+05	.1200000+04	-.1485835+02	.4736929+01	.5641630+01
338	.3370000+05	.1200000+04	-.1354542+02	.6233194+01	.3191933+01
339	.3380000+05	.1200000+04	-.1459058+02	.1232094+02	.1845457+01
340	.3390000+05	.1200000+04	-.1227387+02	.1678961+02	-.2719574+00
341	.3400000+05	.1200000+04	-.9634529+01	.1540479+02	-.2412940+01
342	.3410000+05	.1200000+04	-.1044392+02	.1397716+02	-.3895656+00
343	.3420000+05	.1200000+04	-.1046117+02	.1166750+02	.5093399+01
344	.3430000+05	.1200000+04	-.7778017+01	.1014000+02	.8103070+01
345	.3440000+05	.1200000+04	-.6390458+01	.1167513+02	.6078258+01
346	.3450000+05	.1200000+04	-.5536902+01	.1535011+02	.3253133+01
347	.3460000+05	.1200000+04	-.4013322+01	.1959565+02	.4137596+01
348	.3470000+05	.1200000+04	-.3032534+01	.1955128+02	.5970500+01
349	.3480000+05	.1200000+04	-.3785538+01	.1869539+02	.4391919+01
350	.3490000+05	.1200000+04	-.4493939+01	.1733587+02	.2133982+01
351	.3500000+05	.1200000+04	-.4993610+01	.1328798+02	.2554573+01
352	.3510000+05	.1200000+04	-.6973579+01	.9922488+01	.2313924+01
353	.3520000+05	.1200000+04	-.8948697+01	.1057517+02	-.4153420+01
354	.3530000+05	.1200000+04	-.7331933+01	.1016933+02	-.1961523+01
355	.3540000+05	.1200000+04	-.2632882+01	.6971061+01	-.2232181+01
356	.3550000+05	.1200000+04	.3971157+00	.9230422+01	-.3495418+01
357	.3560000+05	.1200000+04	-.9404373+00	.1390877+02	-.4714609+01
358	.3570000+05	.1200000+04	-.5007720+01	.1395483+02	-.5836048+01
359	.3580000+05	.1200000+04	-.8509835+01	.9771142+01	-.8075557+01
360	.3590000+05	.1200000+04	-.7948104+01	.1099169+02	-.9221467+01
361	.3600000+05	.1200000+04	-.2582385+01	.1444077+02	-.7853178+01
362	.3610000+05	.1200000+04	.2070421+01	.1192672+02	-.6756171+01
363	.3620000+05	.1200000+04	.9925700+00	.6167521+01	-.7358428+01
364	.3630000+05	.1200000+04	-.1985473+01	.3999139+01	-.7724597+01
365	.3640000+05	.1200000+04	-.3227256+00	.5538603+01	-.5212941+01
366	.3650000+05	.1200000+04	.3580875+01	.8241804+01	.4919997+00
367	.3660000+05	.1200000+04	.5458859+01	.1070020+02	.4231699+01
368	.3670000+05	.1200000+04	.6055353+01	.1150814+02	.1575957+01
369	.3680000+05	.1200000+04	.6957039+01	.1057470+02	-.1977979+01
370	.3690000+05	.1200000+04	.6539113+01	.8739816+01	-.1241017+01
371	.3700000+05	.1200000+04	.4857405+01	.6303590+01	.3543955+00
372	.3710000+05	.1200000+04	.3827860+01	.5555851+01	-.8940211+01
373	.3720000+05	.1200000+04	.3709000+01	.5934308+01	-.1573062+01
374	.3730000+05	.1200000+04	.4777675+01	.5812711+01	-.5434085+01
375	.3740000+05	.1200000+04	.7871722+01	.5531480+01	-.9389539+01
376	.3750000+05	.1200000+04	.1199095+02	.5094181+01	-.7430921+01
377	.3760000+05	.1200000+04	.1594832+02	.2575500+01	-.4763246+01
378	.3770000+05	.1200000+04	.2004557+02	-.3053762+00	-.8503983+01
379	.3780000+05	.1200000+04	.2289320+02	.1134144+01	-.1085560+02
380	.3790000+05	.1200000+04	.2192954+02	.6853239+01	-.5722739+01
381	.3800000+05	.1200000+04	.1835672+02	.1086839+02	-.1324825+01
382	.3810000+05	.1200000+04	.1557218+02	.1051468+02	-.8147014+01
383	.3820000+05	.1200000+04	.1509729+02	.9904065+01	.1933032+01
384	.3830000+05	.1200000+04	.1689442+02	.1313100+02	.5562185+01
385	.3840000+05	.1200000+04	.2057148+02	.1757370+02	.5217243+01
386	.3850000+05	.1200000+04	.2192495+02	.1771795+02	.2573204+01
387	.3860000+05	.1200000+04	.1854894+02	.1539799+02	-.6993275+00
388	.3870000+05	.1200000+04	.1662235+02	.1524601+02	-.4499434+01
389	.3880000+05	.1200000+04	.1998943+02	.1402067+02	-.7106290+01
390	.3890000+05	.1200000+04	.2241849+02	.7569485+01	-.9858879+01
391	.3900000+05	.1200000+04	.1897102+02	.1074618+01	-.1335504+02
392	.3910000+05	.1200000+04	.1465353+02	.1208979+01	-.1259933+02
393	.3920000+05	.1200000+04	.1313379+02	.2204057+01	-.8539725+01
394	.3930000+05	.1200000+04	.1175352+02	.2754223+01	-.9417754+01
395	.3940000+05	.1200000+04	.1044297+02	-.3392638+00	-.1307137+02
396	.3950000+05	.1200000+04	.1074585+02	-.5751145+01	-.1211093+02

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Table A-2. Second Output (Continued)

397	.3960000005	.1200000004	.9713272001	-.9431873001	-.2713257001
398	.3970000005	.1200000004	.6351131001	-.7914480001	-.6883551001
399	.3980000005	.1200000004	.5108954001	-.9573947001	-.3891177001
400	.3990000005	.1200000004	.7059538001	-.1213332002	-.2484319000
401	.4000000005	.1200000004	.9300138001	-.1054655002	-.1142095001
402	.4010000005	.1200000004	.1154770002	-.8511077001	-.5393324001
403	.4020000005	.1200000004	.1373325002	-.9457184001	-.7159057001
404	.4030000005	.1200000004	.1230848002	-.9343706001	-.5990803001
405	.4040000005	.1200000004	.8108543001	-.9162848001	-.6772406001
406	.4050000005	.1200000004	.5957218001	-.1247716002	-.1118634002
407	.4060000005	.1200000004	.6358820001	-.1391153002	-.1575279002
408	.4070000005	.1200000004	.5897038001	-.1169431002	-.1575528002
409	.4080000005	.1200000004	.4319679001	-.1274059002	-.1609333002
410	.4090000005	.1200000004	.4617331001	-.1502652002	-.1663582002
411	.4100000005	.1200000004	.8115357001	-.1255639002	-.1443979002
412	.4110000005	.1200000004	.1290145002	-.1131493002	-.1053421002
413	.4120000005	.1200000004	.1598659002	-.1452435002	-.7951703001
414	.4130000005	.1200000004	.1748074002	-.1439989002	-.4200260001
415	.4140000005	.1200000004	.1808250002	-.9719226001	.3642579000
416	.4150000005	.1200000004	.1674439002	-.6539558001	.1301004001
417	.4160000005	.1200000004	.1353422002	-.3105358001	-.2525809001
418	.4170000005	.1200000004	.1216115002	.1270415001	-.8293051001
419	.4180000005	.1200000004	.1323389002	.9574465000	-.1268225002
420	.4190000005	.1200000004	.1379285002	-.1827450001	-.1197575002
421	.4200000005	.1200000004	.1339246002	-.1975332000	-.7112786001
422	.4210000005	.1200000004	.1403093002	.3995200001	-.5117592001
423	.4220000005	.1200000004	.1488740002	.6524900001	-.5838978001
424	.4230000005	.1200000004	.1494671002	.8276350001	-.3650252001
425	.4240000005	.1200000004	.1478637002	.8159711001	-.8873848000
426	.4250000005	.1200000004	.1182475002	.4725304001	-.2713674001
427	.4260000005	.1200000004	.4211827001	-.4211827001	-.6031374001
428	.4270000005	.1200000004	.3100351001	-.2336669001	-.6172542001
429	.4280000005	.1200000004	.9747935001	-.2066686001	-.4530139001
430	.4290000005	.1200000004	.1394752002	.2143313001	-.4291534001
431	.4300000005	.1200000004	.9133271001	.5362942001	-.5631073001
432	.4310000005	.1200000004	.6547800001	.4780514001	-.4223245001
433	.4320000005	.1200000004	.1202157002	.2930020001	.1874519001
434	.4330000005	.1200000004	.1491370002	.1344437001	.4545634001
435	.4340000005	.1200000004	.1192650002	.2445318001	-.1319734001
436	.4350000005	.1200000004	.1251125002	.5768446001	-.5950903001
437	.4360000005	.1200000004	.1755692002	.8105412001	-.3077238001
438	.4370000005	.1200000004	.1952194002	.4154342001	-.1554652000
439	.4380000005	.1200000004	.1885156002	.3159549000	.1927232000
440	.4390000005	.1200000004	.1857700002	.2501333001	.1742953001
441	.4400000005	.1200000004	.1855948002	.4944857001	.1180698001
442	.4410000005	.1200000004	.1987013002	.3559297001	-.2459737001
443	.4420000005	.1200000004	.2208994002	.4305189001	-.2371198001
444	.4430000005	.1200000004	.2013324002	.7130248001	.6049699000
445	.4440000005	.1200000004	.1610499002	.5542913001	.8850921000
446	.4450000005	.1200000004	.1623605002	.1190097001	.4977655000
447	.4460000005	.1200000004	.1554082002	-.9351790000	.7475412000
448	.4470000005	.1200000004	.1304881002	-.2975584001	.1877745000
449	.4480000005	.1200000004	.1063139002	-.6491015001	.2218551001
450	.4490000005	.1200000004	.9652611001	-.6810551001	.4842792001
451	.4500000005	.1200000004	.5533030001	-.4251826001	.4567447000
452	.4510000005	.1200000004	.3865230001	-.4302579001	-.5143541001
453	.4520000005	.1200000004	.8818576001	-.6667893001	-.2359611001
454	.4530000005	.1200000004	.1112895002	-.3257427001	.2500193001
455	.4540000005	.1200000004	.7118761001	.1550761001	.3440750001
456	.4550000005	.1200000004	.4856925001	.8939195001	.5402943001
457	.4560000005	.1200000004	.5338974001	-.2900025001	.7434502001
458	.4570000005	.1200000004	.3507434001	-.4841988000	.5050158001

Table A-2. Second Output (Continued)

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459	.4580000+05	.1200000+04	.5959635+00	.1820011+01	.2154548+01
460	.4590000+05	.1200000+04	-.1956334+01	-.7949969+00	-.1633278+00
461	.4600000+05	.1200000+04	-.5551313+01	-.2513773+01	-.4691855+01
462	.4610000+05	.1200000+04	-.8142129+01	-.2039998+01	-.6399214+01
463	.4620000+05	.1200000+04	-.7797396+01	-.4205793+01	-.3545731+01
464	.4630000+05	.1200000+04	-.6977923+01	-.7999659+01	-.3512656+01
465	.4640000+05	.1200000+04	-.5111300+01	-.9848506+01	-.4519648+01
466	.4650000+05	.1200000+04	-.1725854+01	-.1149636+02	.6197717+00
467	.4660000+05	.1200000+04	-.4333393+00	-.1254242+02	.6513810+01
468	.4670000+05	.1200000+04	-.8866632+01	-.1075677+02	.7054974+01
469	.4680000+05	.1200000+04	.3437774+01	-.8575722+01	.5593494+01
470	.4690000+05	.1200000+04	.6221248+01	-.8402354+01	.3899930+01
471	.4700000+05	.1200000+04	.4199815+01	-.8351134+01	.1353852+01
472	.4710000+05	.1200000+04	.7852118+01	-.8717584+01	.1572543+01
473	.4720000+05	.1200000+04	.1050737+02	-.9574777+01	.3159305+01
474	.4730000+05	.1200000+04	.1785635+02	-.8274701+01	.1121755+01
475	.4740000+05	.1200000+04	.1582307+02	-.5864170+01	-.9032499+00
476	.4750000+05	.1200000+04	.9974713+01	-.6219341+01	.1579812+01
477	.4760000+05	.1200000+04	.9002730+01	-.7555327+01	.4618394+01
478	.4770000+05	.1200000+04	.1345989+02	-.8234600+01	.5852424+01
479	.4780000+05	.1200000+04	.1650094+02	-.9180971+01	.7313253+01
480	.4790000+05	.1200000+04	.1330984+02	-.1024443+02	.8112602+01
481	.4800000+05	.1200000+04	.1143451+02	-.1280254+02	.7567885+01
482	.4810000+05	.1200000+04	.1325334+02	-.1038322+02	.7433631+01
483	.4820000+05	.1200000+04	.1298275+02	-.2355255+02	.6099655+01
484	.4830000+05	.1200000+04	.1045320+02	-.2141246+02	.2582680+01
485	.4840000+05	.1200000+04	.8505371+02	-.1760986+02	.4049220+00
486	.4850000+05	.1200000+04	.4604434+01	-.1541948+02	.6158193+01
487	.4860000+05	.1200000+04	.2052488+00	-.1511851+02	.1225509+00
488	.4870000+05	.1200000+04	-.6172775+00	-.1805852+02	.1187635+01
489	.4880000+05	.1200000+04	-.2725209+00	-.2105949+02	.3172256+01
490	.4890000+05	.1200000+04	.2384553+00	-.1839130+02	.4507432+01
491	.4900000+05	.1200000+04	.3252859+01	-.1278981+02	.4959479+01
492	.4910000+05	.1200000+04	.3270420+01	-.1203755+02	.3985103+01
493	.4920000+05	.1200000+04	-.3598610+01	-.1156786+02	.1425907+01
494	.4930000+05	.1200000+04	-.5279425+01	-.5727120+01	-.2133237+00
495	.4940000+05	.1200000+04	-.6650690+01	-.1511982+01	-.8331177+00
496	.4950000+05	.1200000+04	-.5901757+01	-.4552289+01	-.2817721+01
497	.4960000+05	.1200000+04	-.5688830+01	-.9733129+01	-.3704599+01
498	.4970000+05	.1200000+04	-.1513575+01	-.1313977+02	-.6154413+00
499	.4980000+05	.1200000+04	.7677426+00	-.1534412+02	.2670707+01
500	.4990000+05	.1200000+04	-.2096577+01	-.1753757+02	.3309440+01
501	.5000000+05	.1200000+04	-.2363191+01	-.2001345+02	.5337302+01
502	.5010000+05	.1200000+04	.2129934+01	-.1954404+02	.5184544+01
503	.5020000+05	.1200000+04	.5186321+01	-.1521536+02	-.1320850+00
504	.5030000+05	.1200000+04	.4726489+01	-.1505332+02	-.4873724+01
505	.5040000+05	.1200000+04	.1791237+01	-.1825874+02	-.2420242+01
506	.5050000+05	.1200000+04	-.2555654+01	-.1439416+02	.2892289+01
507	.5060000+05	.1200000+04	-.3919044+01	-.8305359+01	.4683129+01
508	.5070000+05	.1200000+04	-.3678484+00	-.9942564+01	.5221232+01
509	.5080000+05	.1200000+04	.2775525+01	-.1469619+02	.7509790+01
510	.5090000+05	.1200000+04	.1451297+01	-.1422989+02	.7348545+01
511	.5100000+05	.1200000+04	-.2529679+01	-.1161315+02	.1987680+01
512	.5110000+05	.1200000+04	-.6255554+01	-.1055356+02	-.2171159+01
513	.5120000+05	.1200000+04	-.6352659+01	-.1056640+02	.1052893+00
514	.5130000+05	.1200000+04	-.2424259+01	-.1221214+02	.3205125+01
515	.5140000+05	.1200000+04	.5484833+00	-.1328368+02	.1046258+01
516	.5150000+05	.1200000+04	-.1085459+01	-.1102662+02	-.2742437+01
517	.5160000+05	.1200000+04	-.3480325+01	-.9332972+01	-.3942426+01
518	.5170000+05	.1200000+04	-.1951790+01	-.1083943+02	-.5174719+01
519	.5180000+05	.1200000+04	.1400346+01	-.1197213+02	-.7904947+01
520	.5190000+05	.1200000+04	.1318555+01	-.1235566+02	-.9463547+01
521	.5200000+05	.1200000+04	-.2538290+01	-.1289417+02	-.1005759+02
522	.5210000+05	.1200000+04	-.5522930+01	-.1056294+02	-.1230975+02
523	.5220000+05	.1200000+04	-.4257022+01	-.7257880+01	-.1564527+02
524	.5230000+05	.1200000+04	-.2092605+01	-.7235979+01	-.1789971+02

Table A-2. Second Output (Continued)

525	.5240000+05	.1200000+04	-.3676423+01	-.6571744+01	-.1321992+02
526	.5250000+05	.1200000+04	-.9256092+01	-.3702594+01	-.1653949+02
527	.5260000+05	.1200000+04	-.1432825+02	-.1596602+01	-.1451126+02
528	.5270000+05	.1200000+04	-.1353379+02	-.1260741+01	-.1311724+02
529	.5280000+05	.1200000+04	-.8835037+01	.1256957+01	-.1242801+02
530	.5290000+05	.1200000+04	-.8058235+01	.2587226+01	-.1234194+02
531	.5300000+05	.1200000+04	-.1215433+02	-.6155583+01	-.1332934+02
532	.5310000+05	.1200000+04	-.1431660+02	-.8553377+01	-.1255155+02
533	.5320000+05	.1200000+04	-.1247137+02	-.7801797+01	-.1023214+02
534	.5330000+05	.1200000+04	-.1442581+02	-.1059792+02	-.8965272+01
535	.5340000+05	.1200000+04	-.1797737+02	-.1193479+02	-.1004579+02
536	.5350000+05	.1200000+04	-.2192215+02	-.6965929+01	-.9673111+01
537	.5360000+05	.1200000+04	-.2351587+02	-.2945462+01	-.5945729+01
538	.5370000+05	.1200000+04	-.1844945+02	-.2593054+01	-.3452524+01
539	.5380000+05	.1200000+04	-.9205601+01	.2055196+01	-.4220460+01
540	.5390000+05	.1200000+04	-.3247110+01	.4085515+01	-.4102542+01
541	.5400000+05	.1200000+04	-.3578795+01	.3439449+01	-.1895912+01
542	.5410000+05	.1200000+04	-.6793492+01	.1424865+01	-.1777579+01
543	.5420000+05	.1200000+04	-.1131733+02	.1720554+01	-.4359730+01
544	.5430000+05	.1200000+04	-.1466299+02	.1122132+01	-.5633297+01
545	.5440000+05	.1200000+04	-.1321651+02	-.4710090+01	-.4843197+01
546	.5450000+05	.1200000+04	-.1203472+02	-.6263653+01	-.4424907+01
547	.5460000+05	.1200000+04	-.1490117+02	-.1350805+01	-.4720934+01
548	.5470000+05	.1200000+04	-.1444147+02	.5939373+01	-.4789433+01
549	.5480000+05	.1200000+04	-.9118952+01	.1174715+02	-.4027546+01
550	.5490000+05	.1200000+04	-.8135434+01	.1439126+02	-.1305753+01
551	.5500000+05	.1200000+04	-.1101195+02	.1387246+02	.2158057+01
552	.5510000+05	.1200000+04	-.9572972+01	.1311116+02	.2222739+01
553	.5520000+05	.1200000+04	-.6459594+01	.1403041+02	-.1540751+01
554	.5530000+05	.1200000+04	-.7791196+01	.1367147+02	-.4573844+01
555	.5540000+05	.1200000+04	-.1037795+02	.1156115+02	-.3649603+01
556	.5550000+05	.1200000+04	-.9985210+01	.1348038+02	.1025715+01
557	.5560000+05	.1200000+04	-.7799155+01	.1725259+02	.6403157+01
558	.5570000+05	.1200000+04	-.6705042+01	.1511705+02	.7309605+01
559	.5580000+05	.1200000+04	-.9196346+01	.1013512+02	.3043629+01
560	.5590000+05	.1200000+04	-.1317135+02	.1030737+02	-.8966997+00
561	.5600000+05	.1200000+04	-.1267413+02	.1199177+02	-.3604025+01
562	.5610000+05	.1200000+04	-.9021220+01	.1080923+02	-.9415461+01
563	.5620000+05	.1200000+04	-.8300359+01	.1195970+02	-.1480913+02
564	.5630000+05	.1200000+04	-.8177503+01	.1537642+02	-.1220149+02
565	.5640000+05	.1200000+04	-.5113242+01	.1468156+02	-.5715387+01
566	.5650000+05	.1200000+04	-.4737590+01	.1335278+02	-.4590846+01
567	.5660000+05	.1200000+04	-.8557010+01	.1552941+02	-.7104888+01
568	.5670000+05	.1200000+04	-.8255197+01	.1767943+02	-.6735446+01
569	.5680000+05	.1200000+04	-.3371237+01	.1263789+02	-.40314297+01
570	.5690000+05	.1200000+04	-.2590635+01	.6370687+01	-.3186836+01
571	.5700000+05	.1200000+04	-.5812790+01	.9093464+01	-.3185731+01
572	.5710000+05	.1200000+04	-.4710934+01	.1193593+02	-.4437600+01
573	.5720000+05	.1200000+04	-.8674490+00	.1421997+02	-.7504972+01
574	.5730000+05	.1200000+04	-.1707401+01	.1505954+02	-.1062329+02
575	.5740000+05	.1200000+04	-.5301903+01	.1517535+02	-.1190047+02
576	.5750000+05	.1200000+04	-.4932673+01	.1585156+02	-.1282501+02
577	.5760000+05	.1200000+04	-.2907225+01	.1387297+02	-.1351792+02
578	.5770000+05	.1200000+04	-.5060357+01	.8137721+01	-.1255450+02
579	.5780000+05	.1200000+04	-.8023593+01	.6796564+01	-.1258837+02
580	.5790000+05	.1200000+04	-.5909220+01	.1207538+02	-.1519665+02
581	.5800000+05	.1200000+04	-.2246629+01	.1380592+02	-.2033639+02
582	.5810000+05	.1200000+04	-.2957940+01	.9169507+01	-.1955720+02
583	.5820000+05	.1200000+04	-.5376724+01	.6273813+01	-.1462531+02
584	.5830000+05	.1200000+04	-.3434900+01	.5022421+01	-.1067758+02
585	.5840000+05	.1200000+04	.1900916+01	.3802539+01	-.1073037+02
586	.5850000+05	.1200000+04	.3692410+01	.3407328+01	-.1300559+02
587	.5860000+05	.1200000+04	-.4721153+01	.6952174+01	-.1331357+02
588	.5870000+05	.1200000+04	-.9144686+00	.8333636+01	-.9635620+01
589	.5880000+05	.1200000+04	.6805239+01	.5365669+01	-.4708818+01
590	.5890000+05	.1200000+04	.1376759+02	.2927499+01	-.1406551+01

Table A-2. Second Output (Continued)

591	.59300000+05	.12000000+04	.1048751+02	.2513741+01	.7559953+00
592	.59100000+05	.12000000+04	.3329433+01	.2515842+01	.1732685+01
593	.59200000+05	.12000000+04	.9175735+01	.4418971+01	.2855511+00
594	.59300000+05	.12000000+04	-.2122873+01	.7404953+01	-.1355059+01
595	.59400000+05	.12000000+04	-.4417202+01	.7321484+01	-.4912737+01
596	.59500000+05	.12000000+04	-.3913337+01	.3354272+01	.3325252+01
597	.59600000+05	.12000000+04	-.3877251+01	.1585392+01	.5985469+01
598	.59700000+05	.12000000+04	-.5992495+01	.1527703+01	.6055403+01
599	.59800000+05	.12000000+04	-.4752229+01	-.2912115+00	.3534922+01
600	.59900000+05	.12000000+04	-.1319696+01	-.3818114+01	.2834003+01
601	.60000000+05	.12000000+04	-.2758907+01	-.4372602+01	.8060464+01
602	.60100000+05	.12000000+04	-.7198876+01	-.2412036+01	.1479680+02
603	.60200000+05	.12000000+04	-.8741535+01	-.2934304+01	.1534124+02
604	.60300000+05	.12000000+04	-.8473580+01	-.5455613+01	.1255954+02
605	.60400000+05	.12000000+04	-.8417346+01	-.4977755+01	.8974705+01
606	.60500000+05	.12000000+04	-.7846573+01	-.1754059+01	.6694945+01
607	.60600000+05	.12000000+04	-.6899100+01	-.3515493+00	.7335791+01
608	.60700000+05	.12000000+04	-.5559504+01	-.1060021+01	.1099203+02
609	.60800000+05	.12000000+04	-.5445773+01	-.6341109+00	.1343144+02
610	.60900000+05	.12000000+04	-.1013678+02	.1071879+01	.1224695+02
611	.61000000+05	.12000000+04	-.1505949+02	.1911652+01	.1054631+02
612	.61100000+05	.12000000+04	-.1524128+02	.2221443+01	.1215309+02
613	.61200000+05	.12000000+04	-.1444993+02	.3103084+01	.1593122+02
614	.61300000+05	.12000000+04	-.1742059+02	.2535671+01	.1961202+02
615	.61400000+05	.12000000+04	-.2090473+02	-.1152759+01	.1553550+02
616	.61500000+05	.12000000+04	-.2097950+02	-.4793015+01	.1153884+02
617	.61600000+05	.12000000+04	-.2154675+02	-.5015921+01	.1112202+02
618	.61700000+05	.12000000+04	-.2090224+02	-.4179872+01	.1381955+02
619	.61800000+05	.12000000+04	-.1488729+02	-.5705947+01	.1438527+02
620	.61900000+05	.12000000+04	-.8578329+01	-.9017069+01	.1304215+02
621	.62000000+05	.12000000+04	-.6803855+01	-.4127967+01	.1321134+02
622	.62100000+05	.12000000+04	-.5051519+01	-.7130488+01	.1625595+02
623	.62200000+05	.12000000+04	-.1702054+01	-.9005154+01	.1991806+02
624	.62300000+05	.12000000+04	-.1525250+01	-.1058008+02	.2004130+02
625	.62400000+05	.12000000+04	-.4105729+01	-.1230673+02	.1973259+02
626	.62500000+05	.12000000+04	-.3795823+01	-.1143113+02	.2287474+02
627	.62600000+05	.12000000+04	-.2564199+01	-.9013545+01	.2800190+02
628	.62700000+05	.12000000+04	-.6132903+01	-.5301001+01	.2402674+02
629	.62800000+05	.12000000+04	-.1240730+02	-.2250235+01	.1495039+02
630	.62900000+05	.12000000+04	-.1441393+02	.3567379+00	.1415295+02
631	.63000000+05	.12000000+04	-.1337754+02	.2335741+01	.2007173+02
632	.63100000+05	.12000000+04	-.1275003+02	.4551326+01	.2337021+02
633	.63200000+05	.12000000+04	-.1076255+02	.4273946+01	.2247120+02
634	.63300000+05	.12000000+04	-.9691998+01	.1779155+01	.1897514+02
635	.63400000+05	.12000000+04	-.1159854+02	-.2262399+01	.1531451+02
636	.63500000+05	.12000000+04	-.1297693+02	-.6975379+00	.1584455+02
637	.63600000+05	.12000000+04	-.7118243+01	-.1293554+01	.1865022+02
638	.63700000+05	.12000000+04	-.1535952+01	-.5323833+01	.1949393+02
639	.63800000+05	.12000000+04	-.1100238+01	-.5853084+01	.2230747+02
640	.63900000+05	.12000000+04	-.6435154+01	-.1522225+01	.2797674+02
641	.64000000+05	.12000000+04	-.9034750+01	.2571290+01	.2827459+02
642	.64100000+05	.12000000+04	-.1084453+02	.5108475+01	.2310975+02
643	.64200000+05	.12000000+04	-.1300629+02	.5035659+01	.1992512+02
644	.64300000+05	.12000000+04	-.1345452+02	.6942884+00	.1725648+02
645	.64400000+05	.12000000+04	-.1413730+02	-.3917199+01	.1291966+02
646	.64500000+05	.12000000+04	-.1543793+02	-.3323576+01	.1235935+02
647	.64600000+05	.12000000+04	-.1405938+02	.5051044+00	.1573003+02
648	.64700000+05	.12000000+04	-.1340976+02	.3807134+01	.1529731+02
649	.64800000+05	.12000000+04	-.1736634+02	.6395299+01	.1134632+02
650	.64900000+05	.12000000+04	-.1922792+02	.6928998+01	.9519502+01
651	.65000000+05	.12000000+04	-.1549091+02	.4971440+01	.6089442+01
652	.65100000+05	.12000000+04	-.1351545+02	.5597003+01	.3485512+01
653	.65200000+05	.12000000+04	-.1458405+02	.1127458+02	.2052076+01
654	.65300000+05	.12000000+04	-.1285076+02	.1541650+02	.1612133+01
655	.65400000+05	.12000000+04	-.9791792+01	.1570067+02	-.2259974+01
656	.65500000+05	.12000000+04	-.1020944+02	.1438451+02	-.1055984+01

Table A-2. Second Output (Continued) ORIGINAL PAGE IS OF POOR QUALITY

657	.6560000+05	.1200000+04	-.1059595+02	.1201826+02	.4215571+01
658	.6570000+05	.1200000+04	-.9231929+01	.1024569+02	.7997363+01
659	.6580000+05	.1200000+04	-.6215293+01	.1115464+02	.6621612+01
660	.6590000+05	.1200000+04	-.5572139+01	.1555973+02	.3513180+01
661	.6600000+05	.1200000+04	-.4298436+01	.1942116+02	.3778981+01
662	.6610000+05	.1200000+04	-.3056702+01	.1970689+02	.5863945+01
663	.6620000+05	.1200000+04	-.3614570+01	.1879941+02	.4825574+01
664	.6630000+05	.1200000+04	-.4435450+01	.1771729+02	.2353925+01
665	.6640000+05	.1200000+04	-.4847299+01	.1404183+02	.2499459+01
666	.6650000+05	.1200000+04	-.6566349+01	.1017346+02	.2586188+01
667	.6660000+05	.1200000+04	-.8821980+01	.1033510+02	.3175956+01
668	.6670000+05	.1200000+04	-.7884235+01	.1053474+02	-.1871965+01
669	.6680000+05	.1200000+04	-.3401525+01	.7294209+01	-.2146799+01
670	.6690000+05	.1200000+04	.1971292+00	.7514024+01	-.3233037+01
671	.6700000+05	.1200000+04	-.4680159+00	.1316021+02	-.4559224+01
672	.6710000+05	.1200000+04	-.4306875+01	.1449034+02	-.5583771+01
673	.6720000+05	.1200000+04	-.8139304+01	.1025220+02	-.7730415+01
674	.6730000+05	.1200000+04	-.8411574+01	.1028940+02	-.9232124+01
675	.6740000+05	.1200000+04	-.2592443+01	.1415909+02	-.8145550+01
676	.6750000+05	.1200000+04	.1680595+01	.1275687+02	-.6833695+01
677	.6760000+05	.1200000+04	.1405164+01	.6953493+01	-.7205623+01
678	.6770000+05	.1200000+04	-.1750160+01	.4328543+01	-.7797850+01
679	.6780000+05	.1200000+04	-.8985411+00	.5138419+01	-.5877459+01
680	.6790000+05	.1200000+04	.3134237+01	.7787246+01	-.4754476+00
681	.6800000+05	.1200000+04	.5334159+01	.1039185+02	.4047055+01
682	.6810000+05	.1200000+04	.5938239+01	.1151098+02	.2387457+01
683	.6820000+05	.1200000+04	.6863920+01	.1097977+02	-.1553781+01
684	.6830000+05	.1200000+04	.6735432+01	.9262710+01	-.1574314+01
685	.6840000+05	.1200000+04	.5120224+01	.7120084+01	.2551674+00
686	.6850000+05	.1200000+04	.3921225+01	.5724175+01	.6232530+01
687	.6860000+05	.1200000+04	.3673947+01	.5781717+01	-.1225712+01
688	.6870000+05	.1200000+04	.4479642+01	.5859072+01	-.4690741+01
689	.6880000+05	.1200000+04	.7261118+01	.5558117+01	-.9083597+01
690	.6890000+05	.1200000+04	.1133903+02	.5251754+01	-.9083159+01
691	.6900000+05	.1200000+04	.1531651+02	.3210429+01	-.4783329+01
692	.6910000+05	.1200000+04	.1943227+02	-.1309912+01	-.7561925+01
693	.6920000+05	.1200000+04	.2256300+02	.5100490+00	-.1104087+02
694	.6930000+05	.1200000+04	.2234659+02	.5891451+01	-.6773131+01
695	.6940000+05	.1200000+04	.1894135+02	.1054563+02	-.1656741+01
696	.6950000+05	.1200000+04	.1595993+02	.1074556+02	-.9106545+00
697	.6960000+05	.1200000+04	.1504517+02	.9782714+01	.1271589+01
698	.6970000+05	.1200000+04	.1543098+02	.1242530+02	.5199345+01
699	.6980000+05	.1200000+04	.1999811+02	.1707132+02	.5521007+01
700	.6990000+05	.1200000+04	.2205802+02	.1801711+02	.3034568+01
701	.7000000+05	.1200000+04	.1930637+02	.1567553+02	-.1124037+00
702	.7010000+05	.1200000+04	.1656036+02	.1516189+02	-.3940054+01
703	.7020000+05	.1200000+04	.1927091+02	.1456023+02	-.6764452+01
704	.7030000+05	.1200000+04	.2243065+02	.8322791+01	-.9299934+01
705	.7040000+05	.1200000+04	.1977363+02	.1785362+01	-.1295358+02
706	.7050000+05	.1200000+04	.1514368+02	-.6996603+01	-.1311776+02
707	.7060000+05	.1200000+04	.1328315+02	.1893219+01	-.9114925+01
708	.7070000+05	.1200000+04	.1203405+02	.2893979+01	-.8883871+01
709	.7080000+05	.1200000+04	.1053494+02	.4054169+00	-.1258394+02
710	.7090000+05	.1200000+04	.1067599+02	-.4938399+01	-.1263045+02
711	.7100000+05	.1200000+04	.1009717+02	-.8323456+01	-.9150035+01
712	.7110000+05	.1200000+04	.6879272+01	-.7973027+01	-.7153147+01
713	.7120000+05	.1200000+04	.5036431+01	-.9088346+01	-.4520732+01
714	.7130000+05	.1200000+04	.6666222+01	-.1195020+02	-.6287946+00
715	.7140000+05	.1200000+04	.9969959+01	-.1102051+02	-.6330800+00
716	.7150000+05	.1200000+04	.1123050+02	-.8502969+01	-.4750971+01
717	.7160000+05	.1200000+04	.1355768+02	-.9270552+01	-.7161613+01
718	.7170000+05	.1200000+04	.1282726+02	-.9511936+01	-.6184863+01
719	.7180000+05	.1200000+04	.8750742+01	-.4952664+01	-.6362996+01
720	.7190000+05	.1200000+04	.6067095+01	-.1186673+02	-.1037897+02
721	.7200000+05	.1200000+04	.6294510+01	-.1404935+02	-.1466010+02
722	.7210000+05	.1200000+04	.6101722+01	-.1198678+02	-.1577395+02

Table A-2. Second Output (Continued)

723	.7220000+05	.1200000+04	.4525554+01	-.1227072+02	-.1593709+02
724	.7230000+05	.1200000+04	.4345114+01	-.1494979+02	-.1567092+02
725	.7240000+05	.1200000+04	.7398193+01	-.1313786+02	-.1494679+02
726	.7250000+05	.1200000+04	.1210695+02	-.1110625+02	-.1118639+02
727	.7260000+05	.1200000+04	.1562115+02	-.1410518+02	-.8291055+01
728	.7270000+05	.1200000+04	.1730461+02	-.1488720+02	-.4926014+01
729	.7280000+05	.1200000+04	.1807432+02	-.1345815+02	-.2358775+00
730	.7290000+05	.1200000+04	.1713091+02	-.69733173+01	.1516239+01
731	.7300000+05	.1200000+04	.1411719+02	-.3820689+01	-.1705424+01
732	.7310000+05	.1200000+04	.1217736+02	.7532942+00	-.7369845+01
733	.7320000+05	.1200000+04	.1301533+02	.1395961+01	-.1224811+02
734	.7330000+05	.1200000+04	.1391757+02	-.1573274+01	-.1240994+02
735	.7340000+05	.1200000+04	.1341895+02	-.7324429+00	-.7843953+01
736	.7350000+05	.1200000+04	.1385789+02	.3392293+01	-.5113622+01
737	.7360000+05	.1200000+04	.1481453+02	.6306332+01	-.5910634+01
738	.7370000+05	.1200000+04	.1494965+02	.8066502+01	-.4226436+01
739	.7380000+05	.1200000+04	.1498837+02	.8400744+01	-.1074337+01
740	.7390000+05	.1200000+04	.1262959+02	.5441674+01	-.2151518+01
741	.7400000+05	.1200000+04	.6210630+01	.7675289+00	-.5646376+01
742	.7410000+05	.1200000+04	.2754307+01	-.2576732+01	-.6359561+01
743	.7420000+05	.1200000+04	.8456717+01	-.2479358+01	-.4761694+01
744	.7430000+05	.1200000+04	.1395999+02	.1395293+01	-.4171206+01
745	.7440000+05	.1200000+04	.1014692+02	.5108870+01	-.5454199+01
746	.7450000+05	.1200000+04	.6314903+01	.5052426+01	-.4827754+01
747	.7460000+05	.1200000+04	.1098620+02	.3191256+01	.8369055+00
748	.7470000+05	.1200000+04	.1500001+02	.1949218+01	.4750243+01
749	.7480000+05	.1200000+04	.1240231+02	.2150109+01	-.1105018+00
750	.7490000+05	.1200000+04	.1203357+02	.5306135+01	-.5763979+01
751	.7500000+05	.1200000+04	.1692259+02	.8158759+01	-.3744311+01
752	.7510000+05	.1200000+04	.1961499+02	.5060110+01	-.3556175+00
753	.7520000+05	.1200000+04	.1896171+02	.5246418+00	.9987575+01
754	.7530000+05	.1200000+04	.1968056+02	.1936943+01	.1477436+01
755	.7540000+05	.1200000+04	.1856139+02	.4882222+01	.1596045+01
756	.7550000+05	.1200000+04	.1940898+02	.3808006+01	-.1956692+01
757	.7560000+05	.1200000+04	.2190456+02	.3892906+01	-.2750747+01
758	.7570000+05	.1200000+04	.2077633+02	.6852051+01	.2424697+00
759	.7580000+05	.1200000+04	.1654404+02	.6150223+01	.1006341+01
760	.7590000+05	.1200000+04	.1597805+02	.1778317+01	.4650863+00
761	.7600000+05	.1200000+04	.1696966+02	-.7006013+00	.7767515+00
762	.7610000+05	.1200000+04	.1371227+02	-.2487232+01	.2153490+00
763	.7620000+05	.1200000+04	.1078041+02	-.6015657+01	.1649756+01
764	.7630000+05	.1200000+04	.9982200+01	-.7086316+01	.4791364+01
765	.7640000+05	.1200000+04	.6287206+01	-.4575077+01	.1585674+01
766	.7650000+05	.1200000+04	.3510132+01	-.4439021+01	-.4730167+01
767	.7660000+05	.1200000+04	.7896719+01	-.6624580+01	-.3264549+01
768	.7670000+05	.1200000+04	.1130056+02	-.4148291+01	.2013849+01
769	.7680000+05	.1200000+04	.7856159+01	.1115040+01	.3371202+01
770	.7690000+05	.1200000+04	.4900629+01	.6974909+00	.4912953+01
771	.7700000+05	.1200000+04	.5337822+01	-.2743629+01	.7385920+01
772	.7710000+05	.1200000+04	.3971291+01	-.1117755+01	.5630946+01
773	.7720000+05	.1200000+04	.1005003+01	.1810045+01	.2407792+01
774	.7730000+05	.1200000+04	-.1495233+01	-.2279999+00	.1511555+00
775	.7740000+05	.1200000+04	-.5047539+01	-.2583933+01	-.3956887+01
776	.7750000+05	.1200000+04	-.7966476+01	-.2056392+01	-.6556962+01
777	.7760000+05	.1200000+04	-.7940759+01	-.3619772+01	-.3994664+01
778	.7770000+05	.1200000+04	-.7114334+01	-.7500119+01	-.3216374+01
779	.7780000+05	.1200000+04	-.5566123+01	-.9641934+01	-.4693993+01
780	.7790000+05	.1200000+04	-.2216359+01	-.1118562+02	-.5339950+00
781	.7800000+05	.1200000+04	-.4435600+00	-.1264386+02	.6002299+01
782	.7810000+05	.1200000+04	-.3160383+00	-.1121116+02	.7266749+01
783	.7820000+05	.1200000+04	.2727156+01	-.8777730+01	.5804488+01
784	.7830000+05	.1200000+04	.6117043+01	-.9369339+01	.4260151+01
785	.7840000+05	.1200000+04	.4667902+01	-.5391950+01	.1671372+01
786	.7850000+05	.1200000+04	.3433223+01	-.8667383+01	.1293012+01
787	.7860000+05	.1200000+04	.9210873+01	-.9613338+01	.3099100+01
788	.7870000+05	.1200000+04	.1712255+02	-.9684026+01	.1646913+01

Table A-2. Second Output (Continued)

789	.7990000+05	.1200000+04	.1750491+02	-.6109967+01	-.4757752+00
790	.7990000+05	.1200000+04	.1100802+02	-.5999941+01	.9923659+00
791	.7990000+05	.1200000+04	.7591310+01	-.7491554+01	.4295750+01
792	.7910000+05	.1200000+04	.1244545+02	-.9145943+01	.5688935+01
793	.7920000+05	.1200000+04	.1551949+02	-.9998951+01	.7071134+01
794	.7930000+05	.1200000+04	.1397977+02	-.1006663+02	.8105214+01
795	.7940000+05	.1200000+04	.1137752+02	-.1213752+02	.7744555+01
796	.7950000+05	.1200000+04	.1298434+02	-.1795652+02	.7523654+01
797	.7960000+05	.1200000+04	.1318932+02	-.2337552+02	.6499759+01
798	.7970000+05	.1200000+04	.1090253+02	-.2209734+02	.3239483+01
799	.7980000+05	.1200000+04	.9572210+01	-.1303753+02	.5995724+00
800	.7990000+05	.1200000+04	.6393211+01	-.1551072+02	.6521096+01
801	.8000000+05	.1200000+04	.7058855+02	-.1509331+02	.8009070+01
802	.8010000+05	.1200000+04	-.6837331+00	-.1754137+02	.4135341+00
803	.8020000+05	.1200000+04	-.2595146+00	-.2082379+02	.2874042+01
804	.8030000+05	.1200000+04	-.7210493+02	-.1925490+02	.4351299+01
805	.8040000+05	.1200000+04	.2742335+01	-.1345451+02	.4950911+01
806	.8050000+05	.1200000+04	.3801457+01	-.1187335+02	.4279314+01
807	.8060000+05	.1200000+04	-.2340755+01	-.1201309+02	.1845311+01
808	.8070000+05	.1200000+04	-.2054318+01	-.6820196+01	-.8355804+01
809	.8080000+05	.1200000+04	-.7036705+01	-.1782557+01	-.6735209+00
810	.8090000+05	.1200000+04	-.5917030+01	-.3755017+01	-.2443322+01
811	.8100000+05	.1200000+04	-.5977444+01	-.8992658+01	-.3834355+01
812	.8110000+05	.1200000+04	-.2295335+01	-.1275019+02	-.1258950+01
813	.8120000+05	.1200000+04	.8582144+00	-.1503462+02	.2322255+01
814	.8130000+05	.1200000+04	-.1590973+01	-.1713743+02	.3659290+01
815	.8140000+05	.1200000+04	-.2745955+01	-.1970379+02	.5054520+01
816	.8150000+05	.1200000+04	.1352379+01	-.2001090+02	.5554329+01
817	.8160000+05	.1200000+04	.4961309+01	-.1570970+02	.9309251+00
818	.8170000+05	.1200000+04	.4978111+01	-.1573023+02	-.4544017+01
819	.8180000+05	.1200000+04	.2412900+01	-.1815656+02	-.3229222+01
820	.8190000+05	.1200000+04	-.1921004+01	-.1546442+02	.2199853+01
821	.8200000+05	.1200000+04	-.4081120+01	-.8895435+01	.4623953+01
822	.8210000+05	.1200000+04	-.1086803+01	-.9172525+01	.5010973+01
823	.8220000+05	.1200000+04	.2550019+01	-.1420305+02	.7140960+01
824	.8230000+05	.1200000+04	.1931479+01	-.1462496+02	.7753115+01
825	.8240000+05	.1200000+04	-.1929059+01	-.1193279+02	.3002017+01
826	.8250000+05	.1200000+04	-.5843272+01	-.1072593+02	-.1930499+01
827	.8260000+05	.1200000+04	-.6654209+01	-.1058290+02	-.5570987+00
828	.8270000+05	.1200000+04	-.3156436+01	-.1198372+02	.3018933+01
829	.8280000+05	.1200000+04	.3770916+00	-.1333175+02	.1691349+01
830	.8290000+05	.1200000+04	-.6058910+00	-.1151077+02	-.2293991+01
831	.8300000+05	.1200000+04	-.3306803+01	-.9353172+01	-.3851351+01
832	.8310000+05	.1200000+04	-.2453952+01	-.1052249+02	-.4840000+01
833	.8320000+05	.1200000+04	.9851934+00	-.1190422+02	-.7479422+01
834	.8330000+05	.1200000+04	.1666059+01	-.1225507+02	-.9347349+01
835	.8340000+05	.1200000+04	-.1930810+01	-.1292721+02	-.9907299+01
836	.8350000+05	.1200000+04	-.5319539+01	-.1115099+02	-.1182100+02
837	.8360000+05	.1200000+04	-.4655191+01	-.7593214+01	-.1514201+02
838	.8370000+05	.1200000+04	-.2278794+01	-.7104489+01	-.1755315+02
839	.8380000+05	.1200000+04	-.3044250+01	-.6943702+01	-.1830377+02
840	.8390000+05	.1200000+04	-.8240564+01	-.3553172+01	-.1702190+02
841	.8400000+05	.1200000+04	-.1382677+02	-.1599407+01	-.1492716+02
842	.8410000+05	.1200000+04	-.1409234+02	-.1481856+01	-.1327557+02
843	.8420000+05	.1200000+04	-.9508945+01	.4911949+00	-.1250951+02
844	.8430000+05	.1200000+04	-.7741756+01	.7392053+00	-.1229117+02
845	.8440000+05	.1200000+04	-.1145029+02	-.5212532+01	-.1292111+02
846	.8450000+05	.1200000+04	-.1427039+02	-.9589193+01	-.1283405+02
847	.8460000+05	.1200000+04	-.1359631+02	-.7757537+01	-.1055779+02
848	.8470000+05	.1200000+04	-.1405153+02	-.9988050+01	-.9872635+01
849	.8480000+05	.1200000+04	-.1732657+02	-.1218520+02	-.9424535+01
850	.8490000+05	.1200000+04	-.2134771+02	-.7944051+01	-.1000504+02

Table A-2. Second Output (Continued)

ORIGINAL PAGE IS
OF POOR QUALITY

851	.8530000005	.1200000004	-.2358320002	-.3235484001	-.4635770001
852	.8510000005	.1200000004	-.2013500002	-.2571255001	-.3585111001
853	.8520000005	.1200000004	-.1071461002	-.4898534000	-.4028521001
854	.8530000005	.1200000004	-.3735707001	.3704271001	-.4324561001
855	.8540000005	.1200000004	-.3342635001	.3313010001	-.2224855001
856	.8550000005	.1200000004	-.6189931001	.1580565001	-.1542625001
857	.8560000005	.1200000004	-.1355134002	.1546124001	-.3934493001
858	.8570000005	.1200000004	-.1443852002	.6728812000	-.5622931001
859	.8580000005	.1200000004	-.1365375002	-.3954719001	-.4999935001
860	.8590000005	.1200000004	-.1189635002	-.6475645001	-.4417539001
861	.8600000005	.1200000004	-.1442120002	-.2439639001	-.4572944001
862	.8610000005	.1200000004	-.1500359002	.4852183001	-.4811934001
863	.8620000005	.1200000004	-.9901773001	.1101261002	-.4254189001
864	.8630000005	.1200000004	-.7819830001	.1421083002	-.1875959001
865	.8640000005	.1200000004	-.1073406002	.1400771902	.1732100001
866	.8650000005	.1200000004	-.1013333002	.1310105002	.2541392001
867	.8660000005	.1200000004	-.6715922001	.1390947002	-.8555949000
868	.8670000005	.1200000004	-.7325171001	.1394456002	-.4320037001
869	.8680000005	.1200000004	-.1012911002	.1145291002	-.4083173001
870	.8690000005	.1200000004	-.1023903002	.1285584002	.1150885000
871	.8700000005	.1200000004	-.8151593001	.1591591002	.5719303001
872	.8710000005	.1200000004	-.6580609001	.1590203002	.7595673001
873	.8720000005	.1200000004	-.8557569001	.1068832002	.3853554001
874	.8730000005	.1200000004	-.1271385002	.9954678001	-.4471589000
875	.8740000005	.1200000004	-.1313177002	.1174135002	-.3043180001
876	.8750000005	.1200000004	-.9504435001	.1101047002	-.8289317001
877	.8760000005	.1200000004	-.8201934001	.1147339002	-.1437544002
878	.8770000005	.1200000004	-.8415757001	.1500615002	-.1314943002
879	.8780000005	.1200000004	-.5525358001	.1506326002	-.6541788001
880	.8790000005	.1200000004	-.4386329001	.1325902002	-.4334245001
881	.8800000005	.1200000004	-.7999850001	.1589864002	-.6792100001
882	.8810000005	.1200000004	-.8798929001	.1795845002	-.7042359001
883	.8820000005	.1200000004	-.4071993001	.1362247002	-.4657900001
884	.8830000005	.1200000004	-.2358003001	.8705845001	-.3252199001
885	.8840000005	.1200000004	-.5437612001	.8738326001	-.3135850001
886	.8850000005	.1200000004	-.5258255001	.1143473002	-.4100487001
887	.8860000005	.1200000004	-.1298431001	.1393096002	-.7030483001
888	.8870000005	.1200000004	-.1195273001	.1502782002	-.1026203001
889	.8880000005	.1200000004	-.4885519001	.1511024002	-.1175880002
890	.8890000005	.1200000004	-.5239727001	.1581676002	-.1255525002
891	.8900000005	.1200000004	-.3021674001	.1454213002	-.1349454002
892	.8910000005	.1200000004	-.44582755001	.9012228001	-.1286009001
893	.8920000005	.1200000004	-.7827059001	.6423409001	-.1235739002
894	.8930000005	.1200000004	-.6551920001	.1117543002	-.1541353002
895	.8940000005	.1200000004	-.2509908001	.1400203002	-.1990856002
896	.8950000005	.1200000004	-.2564983001	.9995045001	-.2009711002
897	.8960000005	.1200000004	-.5175857001	.6435555001	-.1548384002
898	.8970000005	.1200000004	-.4107342001	.6036421001	-.1107595002
899	.8980000005	.1200000004	.1102510001	.4190279001	-.1048251002
900	.8990000005	.1200000004	.3863032001	.3139796001	-.1256444002
901	.9000000005	.1200000004	.6501834000	.6341450001	-.1351975002
902	.9010000005	.1200000004	-.1375923001	.8475112001	-.1041607002
903	.9020000005	.1200000004	.5243837001	.5935649001	-.5415089001
904	.9030000005	.1200000004	.1327751002	.3140223001	-.1822259001
905	.9040000005	.1200000004	.1158358002	.2530679001	.4632492000
906	.9050000005	.1200000004	.4256351001	.2538775001	.1732753001
907	.9060000005	.1200000004	.3985855000	.3972280001	.6351423000
908	.9070000005	.1200000004	-.1687037001	.7025249001	-.1257288001
909	.9080000005	.1200000004	-.4212439001	.7045740001	-.4580755000
910	.9090000005	.1200000004	-.4114534001	.4441870001	.2773027001
911	.9100000005	.1200000004	-.3560732001	.1818260001	.5659788001
912	.9110000005	.1200000004	-.5735071001	.1562390001	.6252702001
913	.9120000005	.1200000004	-.5287823001	.2000007000	.3982907001
914	.9130000005	.1200000004	-.1658597001	-.3350338001	.2575172001
915	.9140000005	.1200000004	-.2155184001	-.4555356001	.6909345001
916	.9150000005	.1200000004	-.6595250001	-.2556669001	.1397997002

Table A-2. Second Output (Continued)

ORIGINAL PAGE IS
OF POOR QUALITY

917	.9150000+05	.1200000+04	-.8713670+01	-.2571948+01	.1527055+02
918	.9170000+05	.1200000+04	-.8539852+01	-.5153049+01	.1333272+02
919	.9190000+05	.1200000+04	-.8442249+01	-.5340757+01	.9491555+01
920	.9190000+05	.1200000+04	-.7976939+01	-.2246072+01	.6903771+01
921	.9200000+05	.1200000+04	-.7057929+01	-.3529454+00	.6975755+01
922	.9210000+05	.1200000+04	-.5758537+01	-.9509739+00	.1035353+02
923	.9220000+05	.1200000+04	-.5198629+01	-.8397635+00	.1334037+02
924	.9230000+05	.1200000+04	-.9091063+01	.8173003+00	.1254059+02
925	.9240000+05	.1200000+04	-.1541358+02	.1859586+01	.1055442+02
926	.9250000+05	.1200000+04	-.1658557+02	.2132150+01	.1162956+02
927	.9260000+05	.1200000+04	-.1451859+02	.2974066+01	.1605173+02
928	.9270000+05	.1200000+04	-.1571845+02	.2345393+01	.1953414+02
929	.9280000+05	.1200000+04	-.2051019+02	-.4446779+00	.1735331+02
930	.9290000+05	.1200000+04	-.2102272+02	-.4415245+01	.1213219+02
931	.9300000+05	.1200000+04	-.2138253+02	-.5173457+01	.1083303+02
932	.9310000+05	.1200000+04	-.2134734+02	-.4194377+01	.1343848+02
933	.9320000+05	.1200000+04	-.1577945+02	-.5312495+01	.1453393+02
934	.9330000+05	.1200000+04	-.9275049+01	-.7755157+01	.1323401+02
935	.9340000+05	.1200000+04	-.6915127+01	-.8255111+01	.1295759+02
936	.9350000+05	.1200000+04	-.5528810+01	-.7222349+01	.1563217+02
937	.9360000+05	.1200000+04	-.2137342+01	-.7593290+01	.1942234+02
938	.9370000+05	.1200000+04	-.1331937+01	-.1024629+02	.2029336+02
939	.9380000+05	.1200000+04	-.3801819+01	-.1221576+02	.1873052+02
940	.9390000+05	.1200000+04	-.4069637+01	-.1170964+02	.2182571+02
941	.9400000+05	.1200000+04	-.2533652+01	-.9455806+01	.2794927+02
942	.9410000+05	.1200000+04	-.5213821+01	-.6359103+01	.2545441+02
943	.9420000+05	.1200000+04	-.1153751+02	-.2792433+01	.1509305+02
944	.9430000+05	.1200000+04	-.1479141+02	.2232993+01	.1357806+02
945	.9440000+05	.1200000+04	-.1365915+02	.1994950+01	.1912849+02
946	.9450000+05	.1200000+04	-.1221934+02	.4255854+01	.2317545+02
947	.9460000+05	.1200000+04	-.1102055+02	.4527689+01	.2231493+02
948	.9470000+05	.1200000+04	-.9700199+01	.9042347+00	.1955194+02
949	.9480000+05	.1200000+04	-.1121275+02	-.2212325+01	.1569979+02
950	.9490000+05	.1200000+04	-.1318418+02	-.9915712+00	.1545204+02
951	.9500000+05	.1200000+04	-.843223+01	-.843223+00	.1431044+02
952	.9510000+05	.1200000+04	-.7177939+00	-.4730560+01	.1939855+02
953	.9520000+05	.1200000+04	-.3893175+00	-.6190573+01	.2153285+02
954	.9530000+05	.1200000+04	-.5599349+01	-.2322013+01	.2721911+02
955	.9540000+05	.1200000+04	-.8799579+01	.2132542+01	.2877545+02
956	.9550000+05	.1200000+04	-.1047695+02	.4829975+01	.2393505+02
957	.9560000+05	.1200000+04	-.1278335+02	.5328079+01	.2024079+02
958	.9570000+05	.1200000+04	-.1346443+02	.1590194+01	.1789030+02
959	.9580000+05	.1200000+04	-.1394913+02	-.3452311+01	.1343531+02
960	.9590000+05	.1200000+04	-.1535252+02	-.3757511+01	.1201729+02
961	.9600000+05	.1200000+04	-.1441710+02	-.1155505+00	.1528675+02
962	.9610000+05	.1200000+04	-.1320714+02	.3337559+01	.1574023+02
963	.9620000+05	.1200000+04	-.1654724+02	.6054013+01	.1195657+02
964	.9630000+05	.1200000+04	-.1939093+02	.7063922+01	.8475371+01
965	.9640000+05	.1200000+04	-.1618754+02	.5277937+01	.6525571+01
966	.9650000+05	.1200000+04	-.1348837+02	.5111917+01	.3831997+01
967	.9660000+05	.1200000+04	-.1457555+02	.1020993+02	.2241637+01
968	.9670000+05	.1200000+04	-.1340743+02	.1590177+02	.5673733+00
969	.9680000+05	.1200000+04	-.1007425+02	.1593233+02	-.2004612+01
970	.9690000+05	.1200000+04	-.9971832+01	.1478397+02	-.1504812+01
971	.9700000+05	.1200000+04	-.1083595+02	.1237814+02	.3305315+01
972	.9710000+05	.1200000+04	-.8725279+01	.1042132+02	.7718424+01
973	.9720000+05	.1200000+04	-.6387551+01	.1073696+02	.7115543+01
974	.9730000+05	.1200000+04	-.5772979+01	.1475124+02	.3861096+01
975	.9740000+05	.1200000+04	-.4580154+01	.1933976+02	.3475363+01
976	.9750000+05	.1200000+04	-.3135838+01	.1983692+02	.5653433+01
977	.9760000+05	.1200000+04	-.3447159+01	.1391115+02	.5227577+01
978	.9770000+05	.1200000+04	-.4358921+01	.1301705+02	.2511636+01
979	.9780000+05	.1200000+04	-.4735417+01	.1479003+02	.2342030+01
980	.9790000+05	.1200000+04	-.6185793+01	.1055273+02	.2757709+01
981	.9800000+05	.1200000+04	-.9555732+01	.1012599+02	.5054680+00
982	.9810000+05	.1200000+04	-.8333225+01	.1078058+02	-.1730546+01

Table A-2. Second Output (Concluded)

983	.9820000+05	.1200000+04	-.4196230+01	.7818507+01	-.2093444+01
984	.9830000+05	.1200000+04	-.1225429+00	.6771729+01	-.2994997+01
985	.9840000+05	.1200000+04	-.7948330+01	.1227696+02	-.4407917+01
986	.9850000+05	.1200000+04	-.3606709+01	.1484107+02	-.5353553+01
987	.9860000+05	.1200000+04	-.7575879+01	.1087339+02	-.7311931+01
988	.9870000+05	.1200000+04	-.8729830+01	.9009110+01	-.9152884+01
989	.9880000+05	.1200000+04	-.4585345+01	.1371293+02	-.8434335+01
990	.9890000+05	.1200000+04	.1126327+01	.1345939+02	-.6905143+01
991	.9900000+05	.1200000+04	.1832694+01	.7932154+01	-.7051132+01
992	.9910000+05	.1200000+04	-.1390625+01	.4167430+01	-.7805106+01
993	.9920000+05	.1200000+04	-.1382995+01	.4302657+01	-.6439991+01
994	.9930000+05	.1200000+04	.2524433+01	.7332928+01	-.1453944+01
995	.9940000+05	.1200000+04	.5165375+01	.1004260+02	.3679834+01
996	.9950000+05	.1200000+04	.5829346+01	.1146659+02	.3029003+01
997	.9960000+05	.1200000+04	.6730429+01	.1106207+02	-.1209948+01
998	.9970000+05	.1200000+04	.6889304+01	.9570249+01	-.1851700+01
999	.9980000+05	.1200000+04	.5404405+01	.7455294+01	.7775235+01
...	.9990000+05	.1200000+04	.4039972+01	.5835329+01	.1967114+01
...	.1000000+05	.1200000+04	.3551879+01	.5725939+01	-.9331658+01
...	.1001000+05	.1200000+04	.4236723+01	.5892620+01	-.3939912+01
...	.1002000+05	.1200000+04	.6595714+01	.5592545+01	-.9613355+01
...	.1003000+05	.1200000+04	.1067872+02	.5359969+01	-.8652152+01
...	.1004000+05	.1200000+04	.1469094+02	.3701676+01	-.5003543+01
...	.1005000+05	.1200000+04	.1874416+02	.3843245+01	-.6840454+01
...	.1006000+05	.1200000+04	.2231529+02	.2755380+01	-.1097551+02
...	.1007000+05	.1200000+04	.2257654+02	.4905710+01	-.7809245+01
...	.1008000+05	.1200000+04	.1954313+02	.1009173+02	-.2134272+01
...	.1009000+05	.1200000+04	.1630329+02	.1094307+02	-.9501214+01
...	.1010000+05	.1200000+04	.1504951+02	.9759723+01	.6709719+01
...	.1011000+05	.1200000+04	.1603321+02	.1173250+02	.4721702+01
...	.1012000+05	.1200000+04	.1938821+02	.1545776+02	.5752594+01
...	.1013000+05	.1200000+04	.2204596+02	.1820479+02	.3482587+01
...	.1014000+05	.1200000+04	.1995053+02	.1502035+02	.4482741+01
...	.1015000+05	.1200000+04	.1565700+02	.1505580+02	-.3347503+01
...	.1016000+05	.1200000+04	.1856739+02	.1494001+02	-.6411258+01
...	.1017000+05	.1200000+04	.2225539+02	.1003626+02	-.8790057+01
...	.1018000+05	.1200000+04	.2052539+02	.2550727+01	-.1244334+02
...	.1019000+05	.1200000+04	.1572551+02	-.1523349+01	-.1350751+02
...	.1020000+05	.1200000+04	.1344159+02	.1531095+01	-.9703905+01
...	.1021000+05	.1200000+04	.1229839+02	.2929995+01	-.4476942+01
...	.1022000+05	.1200000+04	.1058305+02	.1055194+01	-.1217754+02
...	.1023000+05	.1200000+04	.1058740+02	-.4059466+01	-.1299310+02