

Quantifying the Contribution of Post-Processing in Computed Tomography Measurement Uncertainty - DTU Orbit (08/11/2017)

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This paper evaluates and quantifies the repeatability of post-processing settings, such as surface determination, data fitting, and the definition of the datum system, on the uncertainties of Computed Tomography (CT) measurements. The influence of post-processing contributions was determined by calculating the standard deviation of 10 repeated measurement evaluations on the same data set. The evaluations were performed on an industrial assembly. Each evaluation includes several dimensional and geometrical measurands that were expected to have different responses to the various post-processing settings. It was found that the definition of the datum system had the largest impact on the uncertainty with a standard deviation of a few microns. The surface determination and data fitting had smaller contributions with sub-micron repeatability.

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