



Estimating Volumes of Simulated Lung Cancer Nodules (Paperback)

By Nist

Createspace, United States, 2013. Paperback. Condition: New. Language: English . Brand New Book ***** Print on Demand *****.Lung cancer is a disease of uncontrolled cell growth in tissues of the lung. Computed tomography (CT) shows promise in detecting lung cancers at earlier, more operable stages, when survival is better. CT scans generate multiple 2-D slice images of the lung and digital image processing software is used to combine these images into a 3-D representation of the lung and, in particular, an identified cancer lesion. Various CT scanners use, often different and usually proprietary, software to develop these 3-D images and generate parameters such as lesion volume. Tracking lesion volume is considered a good diagnostic tool for evaluating the results of patient treatment. The Food and Drug Administration (FDA) is conducting research on developing reference cancer lesions, called phantoms, to test CT scanners and their proprietary software. FDA loaned two semi-spherical phantoms to NIST, called Green and Pink, and asked to have the phantoms measured by a coordinate measuring machine (CMM) and the volumes estimated. This report describes in detail both the experimental and computational methods used to estimate the phantoms volumes as well as a bootstrap method for estimating the...



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