**Computed tomography dataset analysis for stereotaxic neurosurgery navigation**

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Abstract— Experience of design methods of image-guided navigation for stereotaxis neurosurgery is described. The above approach allows obtaining high accuracy to identify spatial the position of the reference stereotactic landmarks. Visualization of the contours of the third ventricle gives the ability to calculate the center of intracerebral stereotactic coordinates system. Use of the proposed techniques in the clinic allows significantly (up to 20%) to improve the effectiveness of stereotactic operations in parkinsonism. Methods for computer tomography image processing are proposed and analyzed. Further, increase accuracy stereotactic targeting functional surgery is associated with the development of machine analysis algorithms tomographic data with a view maximum recognition automation intracerebral landmarks taking into account their individual variability and allow to improve systems for surgical planning by using virtual and full-scale simulation modeling of the main stages a surgical intervention.

Keywords—stereotaxis, visualization, image processing, image-guided surgery, navigation, dataset.