M. V. PRIVALOV [1]

Methods and tools of 3D reconstruction and visualization of a brain from the image series

[1] *Donetsk National Technical University, Donetsk, Ukraine*
E-mail: maxim.privalov@gmail.com

At present time image datasets composed from image series are applied in lots of medical and scientific tasks, such as CT and MRI studies, 4D and 5D medical imaging, neural, vascular and brain research projects. Most common task is visualization of datasets that could be handled in several ways. More advanced projects requires registration, segmentation and recognition tasks and integration with other software [1, 2].

Proposed approach, methods and tools that could be used as basis of 3D image reconstruction, visualization and processing framework. It allows to create heterogeneous systems being built on different software platforms. It is shown how can be solved task of reconstruction and visualization of 3D models built from abdominal CT studies and brain image series using proposed approach. Described an easy way for adding advanced processing plugins to already developed pipeline.

[1] M. V. Privalov, *Registration of tumor projections on CT images using neural classifier*, Bulletin of Yuriy Fedkovich Chernivtsi National Unversity, Chernivtsi, 2010. Vol. 1, P. 98-104.

[2] M. V. Privalov, A. A. Derkach, *Building of 3D model of human brain by axial projections with digital image processing methods*, Bulletin of Kyiv-Mohyla Academy, 2011. - Vol. 25, P. 64-69.