MULTIMODALITY WORKSTATION FOR SMALL ANIMAL IMAGE VISUALIZATION AND ANALYSIS

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Small animal studies of different modalities require certain image processing tools to be properly visualized and analyzed. We present a multimodality workstation that performs these tasks for different image modalities: positron emission tomography (PET) and computed tomography (CT). Different import formats are accepted (RAW, Interfile, Analyze, DICOM) and also exported. The animal studies can be displayed in different ways, providing always a tri-planar viewer that shows transaxial, coronal and sagital views synchronized. Several basic tools are always available, like window/level and color table setting, image reformatting (affine transformation), distance and angle measures or line profiles. Analysis module allows segmenting three dimensional Regions of Interest (3-D ROIs) using not only manual but also semi-automatic methods like thresholding and region growing. The system calculates several parameters for the resulting ROIs like volume, total and mean activity or temporal curves in case of dynamic studies. Registration module focus on image fusion: Manual registration methods depending on 3-D landmarks and automated registration algorithms (Normalized Mutual Information) are offered and resulting images can be displayed together using several fusion modes. Arithmetic operations can also be performed on two studies. Finally, several 3-D rendering tools are available for single and multiple studies.