Intravoxel incoherent motion modeling

Optimization of acquisition, analysis and tumor tissue characterization

This thesis contains four papers with the overall aim to improve intravoxel incoherent motion (IVIM) analysis, especially for tumor tissue characterization. The thesis also provides a review of the topics related to the papers. In Papers I and II methods for estimation of IVIM parameters are evaluated on data from simulations and in vivo tumor imaging. In Paper III a framework for optimization of IVIM examinations is presented and evaluated through simulations and in vivo measurement of healthy volunteers. Paper IV describes a method for identification of functional tumor subregions based on clustering of IVIM parameters and relates the results to proliferative activity derived from histological analysis.

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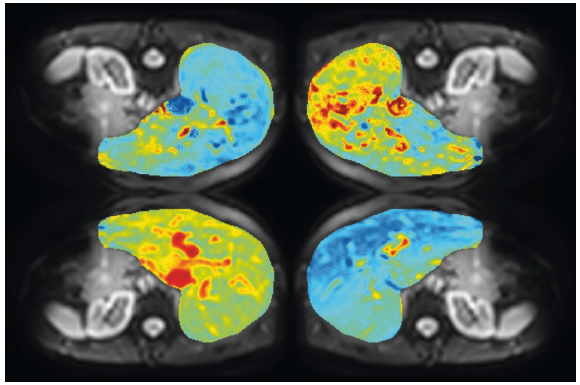

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