

סמינר במדעי היסוד

יום חמישי 4.6.2009 בשעה 13:00-14:00 בפיקוס 303

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אוניברסיטת תל-אביב

Multi-physical model of MRI scanning device and its application to the tumor geometry estimation

תקציר

Computer-assisted diagnosis is one of the "hottest" fields in the interdisciplinary research located on the cutting edge between life and exact sciences. One of its most challenging topics belongs to improvement of cancer diagnostics, and, in particular, to extraction of tumor-related information from the series of MR images. Current methods are very inaccurate and large number of radiation therapy patients receive either under-treatment or over-treatment. The radiologist is able to do a very good job of finding the tumor and identifying its location, but has a difficult time determining size, shape and other details about the tumor.

In this talk I will discuss an approach that combines high-fidelity modeling of MRI scanning device together with the analysis of capillary permeability extracted from the signal collected from the MRI machine to provide the radiologist with accurate geometric information about the tumor.

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