MATHEMATICS OF LIFE

HGS MathComp

IWR Interdisciplinary Center for Scientific Computing

UNIVERSITÄT HEIDELBERG ZUKUNFT SEIT 1386

Modelling glioma growth with fully anisotropic diffusion

Talk • Special Interest Group “Mathematics of Life”

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The human brain has a complex geometric structure consisting of white and gray matter, blood vessels, ventricles, skull etc. It forms a highly anisotropic medium. Glioma in the brain are known to invade along white matter tracks and along other brain structures. Using diffusion tensor imaging (DTI) it is now possible to obtain directional information of the brain geometry.
In my talk I will show how this DTI information can be used to parametrize a fully anisotropic diffusion equation for glioma spread. We validate the model on clinical data of glioma patients and discuss the future use in treatment design. (joint work with A. Swan, K.J. Painter, C. Surulescu, C. Engwer, M. Knappitsch, A. Murtha).

Followed by: “Meet the speaker” in the common room (with drinks and canapes).

“Mathematics of Life” is a special interest group organized by doctoral students of the HGS MathComp.

June 6, 2017 • 11:00

Mathematikon • Conference Room / 5th Floor
Im Neuenheimer Feld 205 • 69120 Heidelberg
www.mathcomp.uni-heidelberg.de/events