

Visual analysis of dynamic processes



Contribution ID: 21

Type: **not specified**

Tensor Visualization

Wednesday, 11 January 2017 09:00 (1 hour)

Tensor-field visualization has got special attention of the visualization community in the last decades. An important force on this development is the advance of diffusion weighted magnetic resonance imaging (DW-MRI) acquisition. This MRI modality allows the acquisition of water diffusion information in living tissue. This information measured at the macro level (mm) allows the unprecedented in-vivo visualization of fibrous structures (e.g., white matter fiber bundles) at the microscopic level. The diffusion information can be represented by a second-order positive definite tensor, but also by higher-order descriptors that provide more insight in the complexity of the fibrous structure. In this talk, I will present an overview of the different visualization techniques that have been developed for tensor field visualization focusing on the medical domain, and touch upon uses in material sciences. I will also describe my view on the current main challenges on tensor-field visualization.

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Track Classification: Lectures