Diffusion MRI on a Cartesian grid with immersed interfaces

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Diffusion MRI measures the diffusion of water in biological tissue. To simulate the diffusion MRI signal, it is important to accurately describe the geometry of the biological cells and cell membranes. We discretize this problem on a Cartesian grid and model cell membranes by interfaces that are not necessarily aligned with the computational grid, using the method of [1]. This results in a second order convergent method that correctly accounts for the interface surface area.

Références

[1] Latige, Manuel and Gallice, Gerard and Colin, Thierry, *A second order Cartesian finite volume method for elliptic interface and embedded Dirichlet problems*, Computers and Fluids 83, 2013.

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