Performance of MOL for Surface Motion Driven by a Laplacian of Curvature

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We analyze the convergence and performance of method of lines (MOL) when solving a system of nonlinear 4th order partial differential equations describing surface movement by diffusion. We discuss the effect of moving boundaries and show the performance of using several ODE solvers, both sequential and parallel, in time integration. The model applies to an analysis of microstructural evolution in sintering – a material manufacture process.

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