

Numerical Analysis of a Bio-Polymerization Model

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This report investigates a stabilization method for first order hyperbolic differential equations applied to DNA transcription modeling. It is known that the usual unstabilized finite element method contains spurious oscillations for nonsmooth solutions. To stabilize the finite element method the authors consider adding to the first order hyperbolic differential system a stabilization term in space and time filtering. Numerical analysis of the stabilized finite element algorithms and computations describing a few biological settings are studied herein.

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