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Polymerization and oscillation stuttering in a filamentous model of the subcellular Min oscillation ANDREW RUTENBERG, Dalhousie University, SUPRATIM SENGUPTA, Jawaharlal Nehru University, ANIRBAN SAIN, Indian Institute of Technology - Bombay, JULIEN DERR, Harvard University — We present a computational model of the *E. coli* Min oscillation that involves polymerization of MinD filaments followed by depolymerization stimulated by filament-end zones of MinE. Our stochastic model is fully three-dimensional, and tracks the diffusion and interactions of every MinD and MinE molecule. We recover self-organized Min oscillations. We investigate the experimental phenomenon of oscillation stuttering, which we relate to the disruption of MinE tip-binding at the filament scale.

Andrew Rutenberg
Dalhousie University

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