

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Motor protein-induced length regulation of microtubule antiparallel overlaps HUI-SHUN KUAN, MEREDITH BETTERTON, University of Colorado at Boulder — Motor proteins moving on microtubule overlaps play an important role during cell division. The central mitotic spindle remains stable in size during anaphase due to overlap length regulation. The mechanisms by which microtubule antiparallel overlaps are regulated in length are still poorly understood. We studied length regulation system inspired by experiments on the motion of kinesin-4 motors on antiparallel microtubule overlaps. Overall motor binding is key for controlling the length. We compare our results to kinetic Monte Carlo simulations and show how the steady state length depends on bulk motor concentration and the origin of the critical concentration.

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Date submitted: 18 Nov 2016

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