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Noise limitations on E. Coli cell division accuracy

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Accurate cell division in E. Coli requires the Min family of proteins. Remarkable, MinD and MinE exhibit spatial oscillations, resulting in a minimum of MinD near the center of the cell. This minimum is thought to be the signal for assembly of the cell division machinery. Although deterministic models reproduce many observed features, a stochastic treatment is needed to test the extent to which finite particle number noise limits the accuracy of this determination. This talk describes a stochastic dynamics based simulation of this system; our results are then compared to the measured cell division accuracy.