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Shantia Yarahmadian* (syarahmadian@math.msstate.edu), Department of Mathematics and Statistics, Mississippi State, MS 39762, and **Sidney L. Shaw**. *The effect of sampling rate on the statistics of microtubules*. Preliminary report.

Microtubules are long, proteinaceous filaments that perform structural functions in eukaryotic cells by defining cellular shape and serving as tracks for intracellular motor proteins. Using Dichotomous Markov Noise (DMN) and signal processing techniques, we will study the effect of sampling rate in the measurement of dynamic instability parameters of microtubules. For this study, we will use a generalized PDE model for microtubule dynamics to the case where the rates of elongation as well as the lifetimes of the elongating and shortening phases are a function of GTP-tubulin concentration. (Received September 21, 2010)