1145-92-2404 **Joe John Klobusicky*** (klobuj@rpi.edu), 110 8th St., Troy, NY 12180, and **Peter Kramer** and **John Fricks**. *Averaging for molecular motors with switching behavior.*

We present a stochastic model for the evolution of molecular motors along a microtubule. The model allows for attachment and detachment of motors at rates which depend on motor positions. This results in a system of stochastic differential equations with an underlying Cox process which determines switching. In this talk, we will show a separation of scales for motor variables, which allows us to take homogenization limits to describe effective behavior of the expected position of the motor system. We also include several experiments comparing theoretical results with simulations. (Received September 25, 2018)