



2007 - 2008



**MATHEMATICS COLLOQUIUM SERIES
UNIVERSITY OF CENTRAL FLORIDA**

**Professor Hongyun Wang
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University of California, Santa Cruz**

will speak on

Stokes efficiency and potential profile of molecular motors

ABSTRACT: I will start by describing the mathematical framework for modeling molecular motors and then define the Stokes efficiency. Since molecular motors operate in an environment dominated by high viscous drag and large thermal fluctuations, they behave differently from macroscopic motors. For molecular motors, the Stokes efficiency is different from the thermodynamic efficiency. I will illustrate this difference and the related difference between the thermodynamic stall and the viscous stall. The clarification of these subtle issues is critical for us to understand and interpret correctly single molecule experimental data. In an effort to make full use of experimental data, I introduced the concept of motor potential profile. I will discuss how the motor potential profile can be reconstructed from experimental data, and discuss what the motor potential profile tells us.

DATE: Thursday, April 17, 2008
TIME: 10:30am – 11:30am
PLACE: MAP 318

Refreshments will be served