

PICO NEWTON TUG OF WARS IN LIVING CELLS

By Dr. Roop Mallik

Tata institute of Fundamental Research

TUESDAY, OCTOBER 5, 2010 AT 4.30 P.M.

Seminar Room, PF AG 14

Prefabs, Near Annabhau Sathe Bhavan

University of Mumbai, Vidyanagari Campus

Kalina, Mumbai 400098

Molecular motors are remarkable nanoscale proteins designed by nature. Some of them use energy from electrical gradients to make ATP, while others carry things around inside the cell using the same ATP as an energy source. These machines generate pico Newton (10⁻¹² Newton) forces to do work on the scale of nanometers. There is a lot of interest in unraveling the secrets of such robust nanoscale machines, and perhaps making some of our own in the future.

Dr. Roop Mallik will give a brief introduction to Molecular motor proteins, and then move on to issues of more current interest. How is work done at the nanoscale by a motor used to achieve global organization inside the cell? For this, we must understand how multiple motor proteins work collectively, and how they are designed in nature to work together with each other. In this context, he will discuss some recent experiments to show how two teams of Motor proteins play out a “tug-of-war” inside the cell.

Dr. Roop Mallik obtained his Masters in Physics from the University of Allahabad and Ph.D. in Condensed Matter Physics from TIFR, Mumbai. During his post-doc days he came to realize that there was much more Matter outside Condensed Matter and somewhere along the way, became a “proper” biologist

Tuesday Colloquium organized by

