



PAUL SCHERRER INSTITUT

PSI Colloquium

The Physics of Protein Dynamics

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DATE: Thursday August 19, 2010
COFFEE: 11:00 a.m.
SEMINAR: 11:15 a.m.
PLACE: WHGA/001

"Ask not what physics can do for biology, ask what biology can do for physics". Stan Ulam.

Protein are the building blocks of matter. The structures of many proteins have been determined with X-ray and neutron diffraction. Long before the first structures were found by Perutz and Kendrew, Schrödinger predicted that the building blocks of nature were like amorphous crystals that could accept a large number of different conformations. Indeed we found more than 35 years go that proteins are not in unique structures, but can assume a very large number of different conformations. This fact makes proteins a different state of matter, between liquids and glasses that poses challenges to physicists, chemists, and biologists. I will discuss some of the basic properties of proteins, in particular the energy landscape and fluctuations. I will then show that these properties explain the so-called dynamical transition quantitatively.