

1056-92-1980 **Cecilia Clementi*** (cecilia@rice.edu), Department of Chemistry, Rice University, Houston,
TX 77251-1892. *A Multiscale Approach to Characterize Macromolecular Dynamics and Functions.*

The understanding of emerging collective behaviors in biomolecular complexes represent a major challenge in modern biophysics. As a first step toward the study of such processes we have applied multi-resolution nonlinear dimensionality reduction to obtain reliable low-dimensional representations and models for the dynamics of apparently high-dimensional complex systems such as proteins in a biological environment. Although still preliminary, the results clearly show that the proposed methods can efficiently find low dimensional representations of a complex process such as protein folding. (Received September 23, 2009)