Transitions in the quantum protein.

H. Bohr

Department of Physics The Technical University of Denmark, Lyngby Denmark
Email: hbohr@fysik.dtu.dk

The protein molecule is viewed as a quantum system excitable in various modes and occupying corresponding states by radiations. These conformational states are realized in a string model from which spectra can be observed experimentally. Both theoretical and experimental techniques are presented and results are derived and compared with experiments. Especially topological aspects of these theories are discussed. Topological effects are found to give rise to novel phenomena, i.e. torsional modes that are important for protein folding and reaction kinetics.