

第 1 7 4 回化学コロキウム

日時： 2011年3月7日（月） 15：00

場所： 首都大学東京 8号館301号室

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題目： Protein Dynamics and Stability: Universality vs. Specificity

要旨：

In this talk, I shall discuss the fractal characteristics of natively folded proteins and their relation to protein dynamics and function. A universal equation of state, describing the relation between the spectral and fractal dimensions of a protein and the number of amino acids, will be shown. Using structural data from the protein data bank of about 5,000 proteins, and the Gaussian network model, I shall demonstrate that the equation of state is well obeyed. Various dynamical quantities will be shown to evolve anomalously. The effect of the hydrodynamic interaction between amino acids will be also elucidated. Finally, I will discuss the dynamic structure factor $S(k,t)$ of proteins at large wave numbers k , that are sensitive to the protein internal dynamics, and demonstrate its stretched exponential decay.