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Subdiffusion in the Internal Dynamics of Peptides THOMAS NEUSIUS, Computational Molecular Biophysics, IWR, University of Heidelberg, Im Neuenheimer Feld 368, D-69120 Heidelberg, JEREMY C. SMITH, Center for Molecular Biophysics, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge TN 37831-6164 — The internal dynamics of biopolymers is a topic of intense current research, both in experiment and theory. Recent experimental results have demonstrated the presence of internal subdiffusion in biopolymers at equilibrium. Molecular dynamics simulation of oligopeptide chains reveals configurational subdiffusion at equilibrium extending from 10^{-12} to 10^{-8} s. We examine the possible origins of the subdiffusion and demonstrate that it arises from the fractal-like structure of the accessible configurational space [PRL **100**, 188103 (2008)].

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