Energy landscape analysis of biomolecular folding: pathways, rates and transition times

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Energy landscape theory provides the conceptual framework for understanding the folding of proteins and nucleic acids. I describe approaches for measuring energy landscape profiles using force spectroscopy and mapping the network of states in the folding pathways.

Using these methods, we can determine some of the key properties describing the folding, such as the configurational diffusion constant and the time needed for the actual structural change to take place.

I discuss results for the folding of both nucleic acids and proteins, showing how we can explore questions like roughness in the landscape and internal friction.