

Quantifying a Spectral Distribution for Conformational Change and Equilibrium in Biopolymer Species

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Abstract. A self-organized living system (SOLS) can be generalized as a biophysical 'heat bath' in thermal equilibrium and homeostasis mediated by a hierarchical variety of metabolic processes. Many of these processes relate to conformational changes in oligomers. The 'cooking of an egg' is a prime example of conformational change in proteins. The delicate balance for optimal health can relate directly to molecular conformation. For example incorrect conformation in Amyloid beta-derived diffusible ligands (ADDLs) is said to be the cause of Alzheimer's Disease; likewise prion molecule conformation leads to neurodegenerate encephalopathies. We present an empirically testable model centered on quantizing the energy of the concept of a "Conformon" as it relates to a unique spectral signature for each oligomeric complex. The balance and tipping point between 'good and bad' conformation is described utilizing Double-Cusp Catastrophe Theory as it relates to a Unified Field 'force of coherence' mediated by the Noetic Field equation for mediating 'topological charge'.

References

- [1] Luiso, P.L. (1997) Molecular conformational rigidity: An approach to quantification, *Naturwissenschaften*, 64: 569-574
- [2] Kier, L.B. (1987) Indexes of molecular shape from chemical graphs, *Med. Res. Rev.* 7: 417-440.
- [3] Ji, S. (2012) *Molecular Theory of the Living Cell: Concepts, Molecular Mechanisms, and Biomedical Applications*, New York: Springer.
- [4] Ji, S. (1985) The Bhopalator – A Molecular model of the living cell based on the concepts of conformons and dissipative structures, *J. Theor. Biol.* 116:399-426.
- [5] Amoroso, R. L. (2004). Application of double-cusp catastrophe theory to the physical evolution of qualia: Implications for paradigm shift in medicine and psychology.
- [6] Chu, M. Y., & Amoroso, R. L. (2008). Empirical Mediation of the Primary Mechanism Initiating Protein Conformation in Prion Propagation. *Proceedings of CASYS07, IJCAS*, 22, 292-313.
- [7] Amoroso, R. L., & Amoroso, P. J. (2006). Elucidating the Trigger of Alzheimer's Disease: A Complex Anticipatory Systems Approach. *International J of Computing Anticipatory Systems*, ISSN, 1373-5411.
- [8] Amoroso, R. L. (1999). An introduction to noetic field theory: The quantization of mind. *Noetic J*, 2(1), 28-37.
- [9] Ji, S. (2012) The Franck-Condon Principle (FCP) In *Molecular Theory of the Living Cell: Concepts, Molecular Mechanisms, and Biomedical Applications*, New York: Springer, pp. 18-24.