



Quantum Efficiency Seminar und Colloquium

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FRENKEL EXCITONS ON MOLECULAR AGGREGATES: Something Old, Something New.

The talk will describe the application of the exciton concept of Frenkel to describe light absorption and electronic energy transfer on molecular aggregates. The “Old” will be an historical survey of the origins of the exciton as a description of radiationless energy transfer and subsequent success in understanding the spectra of J and H aggregates of dye molecules. Particular emphasis will be placed on the influence of electronic – vibrational coupling using the Coherent Exciton Scattering approximation as example. The “New” will describe recent work, albeit based on a very old idea of Dirac, showing that classical coupled oscillators exhibit the same coherence as ascribed to quantum excitons, even extending to a modelling of quantum coherence in the photosynthetic unit. Finally some discussion will be given as to whether some measures of quantum entanglement can be reproduced classically.

Date: Tuesday, July 10th, 2012 14:15 pm
Location: Lecture Hall 1, Hermann-Herder-Str. 3, Freiburg

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