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Transport and Entanglement in Model Systems of Photosynthesis

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Abstract:

Recent experimental evidence suggests that in the early step of photosynthesis, where light is absorbed and excitation energy is transported through a network of molecular complexes of chlorophyll units, the energy transfer happens quantum coherently, even at room temperature. Stimulated by these findings, theoretical models of the excitation transfer process have linked the transport properties of light-harvesting complexes to entanglement. In this talk, we shall critically revisit the theoretical modeling of transfer scenarios in light-harvesting complexes and discuss the notion and role of entanglement in this context.