

Quantum effects in complex materials: Determinism, statistics, structure

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During the last couple of years, due to tremendous progresses on the experimental side, there has been an intensified debate on the possible role of quantum mechanics in the context of biophysics - i.e. in systems which are rightfully characterized as widely open, disordered, noisy, "complex". Inspired by some analogies between paradigmes of biological and technological light-energy conversion, also a possible contribution of quantum science to enhanced, green energy technologies is under discussion. The talk will attempt to summarize the current state of the debate, and to provide a perspective on the challenging problems ahead.

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