

Long-lasting coherence in biological complexes: from microscopic models to actual experiments

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Recent observations of oscillatory features in the optical response of photosynthetic complexes have revealed evidence for surprisingly long-lasting electronic coherences which can coexist with energy transport. This observation has generated different questions like: Is quantum coherence responsible for the surprisingly high efficiency of natural light harvesters? If so, how do such systems avoid the loss of coherence due to interactions with their warm, wet and noisy environments? The answer to these important questions rests in the beneficial interplay between electronic and vibrational degrees of freedom.