Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Role of the different factors contributing to long lived quantum coherence in the FMO complex NAYELI ZUNIGA-HANSEN, RUSSELL CEBALLOS, MARK S. BYRD, None — The Fenna-Matthews-Olson (FMO) complex is one of the most widely studied photosynthetic complexes. It occurs as a trimer with three identical subunits that contain eight bacteriochlorphylls embedded in a protein environment. The observation of long lived quantum coherence and the remarkably high efficiency with which energy transfer takes place in the FMO complex has brought much attention to try to understand the mechanism behind it. We study the different factors that contribute to the long lived coherence in this complex by looking at the interplay of different parameters within the intermediate regime, where the strength of the coupling to the environment is comparable to the strength of the coupling between the sites of the system. We attempt to verify if the environmental modes due to the protein backbone have an effect on the energy transfer or if it is inherently robust due to its structure.

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None

Date submitted: 14 Dec 2012 Electronic form version 1.4