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Shaped ultrafast pulses for coherent control of energy flow in light harvesting complexes[1] MOHAN SAROVAR, K. BIRGITTA WHALEY, University of California, Berkeley — We report on preliminary investigations of the use of evolutionary algorithms for the design of shaped femtosecond laser pulses to control energy flow in the Fenna-Matthews-Olson (FMO) light harvesting complex. We shape the experimentally accessible phase degrees of freedom of pulses of various duration and assess the ability to control (i) the exciton population on distinct chromophores, and (ii) the purity of the FMO complex state at short times. We assess the experimental feasibility of the designed pulses and sketch directions for future improvement of the pulse design technique.

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Mohan Sarovar
University of California, Berkeley

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