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A Classical Theory of Multichromophoric Resonance Energy Transfer SEBASTIAN DUQUE, Grupo de Fisica Atomica y Molecular, Instituto de Fisica, Facultad de Ciencias Exactas y Naturales, Universidad de Antioquia UdeA. Medellin, Colombia, PAUL BRUMER, Chemical Physics Theory Group, Department of Chemistry and Center for Quantum Information and Quantum Control, University of Toronto, Toronto, Canada, LEONARDO A. PACHON, Grupo de Fisica Atomica y Molecular, Instituto de Fisica, Facultad de Ciencias Exactas y Naturales, Universidad de Antioquia UdeA. Medellin, Colombia — Based on classical electrodynamics, a classical theory of multichromophoric resonance energy transfer is formulated. In the maximum coupling configuration between N_{A} acceptors and N_{D} donors, the present theory predicts a first-order-in-the-interactions enhancement of the energy transfer rate by a factor N_{A} and additional second-order-in-the-interactions enhancement arising from the interaction between donors. The theory is applied to predict the transfer rate of the LH II and results are found to be in good agreement with experimental results.

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