ROVIBRONIC WAVE PACKETS ON MULTIPLE ELECTRONIC STATES: PHASE CONTROL AND EVOLUTIONARY ALGORITHMS

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Phase-shaped femtosecond laser pulses are used to prepare and manipulate rovibronic wave packets on multiple electronic states of lithium dimer.[a] Wave packets up to fourth order in the number of photons used in the Raman pumping steps are observed. Evolutionary learning algorithms optimize the phases versus frequency of the laser pulses to maximize individual quantum beat features. The results are of interest for the manipulation of quantum information in molecules.

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