

Numerical Algorithms for Optimal Laser Control

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Abstract. We present numerical aspects of particular algorithms used for laser control of the orientation of the HCN molecule. The control problem is formulated as an optimization problem of an objective function where the search space is defined by the laser field parameters. In order to measure the orientation, we use different objective functions which are computed by solving the time-dependent Schrödinger equation. We examine different strategies to solve this problem. Specifically, we compare the gradient-like algorithms, evolutionary algorithms and memetic algorithms applied to the orientation problem.