

Molecular orientation by two-color laser fields

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We have theoretically investigated the molecular orientation by a asymmetric potential created by the superposition of two-color laser fields. The time-dependent Schrodinger equation is solved numerically for different field parameters. We have compared the quantum dynamics with the solution of the classical equations and have described the conditions, where the classical physics description is valid. We have shown how enhancement or suppression of the molecular orientation can be manipulated by the laser field parameters, such as time between laser pulses, the different intensity of the pulses, etc. These results are important to the operations on a quantum cubit, based on the polar molecules in the optical lattices.

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