

Abstract Submitted
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**Optimization of a laser pulse for xuv Raman excitation of neon
using quantum control combined with multichannel electronic structure**

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— We present a combined quantum control and electronic structure technique for optimizing laser pulses. Krotov's method of control which monotonically improves a given cost function is combined with the multichannel time-dependent configuration interaction singles (TDCIS) method [Greenman, et. al. PRA 82, 023406 (2010)]. We apply this technique to optimize an xuv laser pulse to perform the Raman excitation of Ne to the $1s^2 2s^2 2p^5 3p$ state through the intermediate resonance $1s^2 2s^1 2p^6 3p$ state. Quantum control is useful to minimize ionization and population of other states in this process.

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