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Generation of Vibrational Entangled Coherent States of Two Trapped Ions

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Abstract: We propose a scheme for the generation of entangled coherent states for the center-of-mass and relative vibrational modes of two trapped ions. In the scheme the ions are simultaneously illuminated by a single standing-wave laser tuned to the carrier. The scheme allows the production of an entangled coherent states with a considerably high speed as long as a laser field of sufficiently high intensity is available.

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Key words: entangled coherent state, vibrational mode, trapped ion

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