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Quantum interference in Moessbauer resonance fluorescence

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Abstract

We studied the resonance fluorescence of Moessbauer radiation of Fe 57 nuclei with coherently coupled nuclear sublevels. The obtained results prove that the traditional Moessbauer spectroscopy in scattering geometry is effective enough for experimental investigation of the quantum interference of gamma transitions and for studying the coherencies induced by external radiation fields.

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Keywords

Coherent spin dynamics, Moessbauer effect, Quantum interference, Resonance fluorescence