

Transparency of a thin absorber in Moessbauer optics: Effect of electron relaxation

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Abstract

A model of Moessbauer absorption taking into account the effects of the electron relaxation and the nuclear levels anticrossing simultaneously has been proposed. The dependence of the absorption deficit (transparency) on the relaxation and mixing parameters has been obtained using the stochastic theory of Moessbauer relaxation spectra. The role of quantum interference in occurrence of a partial transparency on Moessbauer transitions has been explored under these conditions. © 2010 IOP Publishing Ltd.

<http://dx.doi.org/10.1088/1742-6596/217/1/012016>
