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Hyperfine structure of submillimeter EPR spectra of non-kramers lanthanide ions in crystals

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Abstract

The hyperfine structures of submillimeter EPR spectra of CsCdBr₃:Tm³⁺ and CaF₂:Dy²⁺ single crystals have been resolved and analyzed. The crystal field parameters and the magnetic hyperfine constants are obtained from fitting the envelopes of the simulated spectra to the measured signals. From the specific peculiarities of the hyperfine structure the energy of the interion interaction in the thulium dimers in CsCdBr₃ is determined. The isotopic shift of the crystal field splitting in energy patterns of dysprosium isotopes in CaF₂ is estimated. © Springer-Verlag 1998 Printed in Austria.
