

## **EPR and spin-lattice relaxation of rare-earth ions in LiLuF<sub>4</sub> monocrystals**

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### **Abstract**

The EPR and spin-lattice relaxation are studied of impurity rare-earth ions in LiLuF<sub>4</sub> crystals at liquid-helium temperatures. It is detected that paramagnetic relaxation of Er<sup>3+</sup> ions is retarded by the effect of the phonon throat. The effect of resonance attenuation of the phonon throat is clarified in two-phonon resonance relaxation processes of Er<sup>3+</sup> ions. The Debye temperature of the crystal is determined from an analysis of experimental results. © 1988 Plenum Publishing Corporation.

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