

Spin-magnon relaxation of Yb³⁺-ions in antiferromagnetic cuprate Y_{1-x}Yb_xBa₂Cu₃O_{6+y}

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Abstract

The spin relaxation of Yb³⁺-ions due to their coupling to antiferromagnetic spin waves existing in CuO₂ planes in YBa₂Cu₃O_{6+y} compound is reported. It is shown that it results in a strong temperature dependence of electron paramagnetic resonance (EPR) linewidth. The temperature dependence of EPR g-factor was also obtained and shows a good agreement with experimental data.

Keywords

Electron paramagnetic resonance, Rare-earth ions, YBCO