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Temperature dependence of the EPR linewidth of Yb³⁺ ions in Y_{0.99}Yb_{0.01}Ba₂Cu₃O_X ($6 \leq X \leq 7$) compounds: Evidence for an anomaly near the superconducting transition

Gafurov M., Aminov L., Kurkin I., Izotov V.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Electron paramagnetic resonance experiments on doped Yb³⁺ ions in Y_{0.99}Yb_{0.01}Ba₂Cu₃O_X ($6 \leq X \leq 7$) compounds with different oxygen contents have been made. We have observed a strong temperature dependence of the EPR linewidth in all the investigated samples caused by the Raman processes of spin-lattice relaxation. The spin-lattice relaxation rate anomaly revealed near TC in the superconducting species can be assigned to the phonon density spectrum changes. © 2005 IOP Publishing Ltd.

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