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Intrinsic EPR in La2-xSrxCuO4: Manifestation of threespin polarons

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Abstract

Electron-paramagnetic resonance (EPR) measurements on La2-xSrxCuO4provide experimental evidence of a three-spin polaren, consisting of two Cu2+ ions and one p hole. The symmetry properties and the peculiar temperature dependence of the g values of the EPR line indicate the presence of dynamical Jahn-Teller distortions and formation of a collective mode of polarons and surrounding strongly correlated Cu ions (bottlenecked regime).