

Abstract Submitted
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Magnetic phase diagram of thin film $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ studied by low energy muon spin rotation E. STILP¹, B.M. WOJEK², H. KELLER, Physik-Institut der Universität Zürich, Switzerland, A. SUTER, T. PROKSCHA, H. LUETKENS, E. MORENZONI, Laboratory for Muonspin Spectroscopy, Paul Scherrer Institut, Switzerland, A. GOZAR, G. LOGVENOV, I. BOZOVIC, Brookhaven National Laboratory, USA — The magnetic phase diagram of $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ thin film samples grown on SrLaAlO_4 has been determined by low-energy muon spin rotation. The obtained phase diagram shows the same features as that one of the bulk, but the transition temperatures are drastically shifted. In the antiferromagnetic phase the Neel temperatures T_N are strongly reduced compared to the bulk material and no spin freezing was observed at low temperatures. In the disordered magnetic phase ($x \geq 0.02$) the transition temperature T_g is enhanced. It is concluded that the main reason for the pronounced differences between the magnetic phase diagrams of thin film and bulk samples is strain induced disorder in the thin films.

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