

Abstract Submitted  
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**Phonon-induced magnetic deflagration and detection of very fast CMR in manganites** FERRAN MACIA, JOAN MANEL HERNANDEZ, GUILLEM ABRIL, ALBERTO HERNANDEZ-MINGUEZ, Universitat de Barcelona, FRANCISCO PARISI, Comision Nacional de Energia Atomica, PAULO V. SANTOS, Paul-Drude Institut fur Korperelektronik, JAVIER TEJADA, Universitat de Barcelona — In this work we describe experiments in which we have used surface acoustic waves to induce controlled magnetic avalanches in (La, Pr)-based manganites. The avalanches propagate inside the sample following the law of the magnetic deflagration, and occur at well determined values of the temperature and the applied magnetic field, that depend on the phase separation fraction. Another important point is that the magnetic avalanche is accompanied by colossal variation of the electrical resistance in about 0.1 ms. F. Macia *et al.*, Phys. Rev. B **76**, 174424 (2007). F. Macia *et al.*, Phys. Rev. B, submitted

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