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Observation of a Griffiths phase in paramagnetic $La_{1-x}Sr_xMnO_3$ JOACHIM DEISENHOFER, HANS-ALBRECHT KRUG VON NIDDA, JOACHIM HEMBERGER, ALOIS LOIDL, EP V, Center for Electronic Correlation and Magnetism, University of Augsburg, 86135 Augsburg, Germany, DANIEL BRAAK, TP II, Institute for Physics, University of Augsburg, 86135 Augsburg, Germany, RUSHANA EREMINA, VLADIMIR IVANSHIN, Kazan State University, 420008 Kazan, Russia, ANATOLI BALBASHOV, Moscow Power Engineering Institute, 105835 Moscow, Russia, TSUYOSHI KIMURA, Department of Applied Physics, University of Tokyo, Tokyo 113-8656, Japan, YOSHINORI TOKURA, Department of Applied Physics, University of Tokyo, Tokyo 113-8656, Japan — We report on the discovery of a new phase boundary above the magnetic ordering temperature in low doped $La_{1-x}Sr_xMnO_3$ by means of ESR and susceptibility measurements. The observed triangular phase regime in the paramagnetic state is identified as a realization of a Griffiths phase, where disorder in the ferromagnetic bonds leads to the existence of a temperature scale above T_C . The influence of quenched disorder to allow for the occurrence of a Griffiths phase becomes evident by its appearance within the Jahn-Teller distorted orthorhombic structure.

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