

CEA - Saclay 91191 Gif-sur-yvette Cedex
Service de Physique de l'Etat Condensé
SÉMINAIRE

Mercredi 12 décembre 11h00

Orme des Merisiers SPEC Salle Itzykson, Bât.774

Ferromagnetic resonance in thin manganite films: spin-wave excitations, colossal magnetoresistance, and magnetic domains

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We study magnetic properties of epitaxial La-Sr-Mn-O films using the ferromagnetic resonance (FMR) technique. (1) The resonant microwave absorption yields magnetization, anisotropy field and spin-wave stiffness. The latter is compared to the inelastic neutron scattering studies of magnon spectrum in single crystals. (2) The nonresonant microwave absorption in magnetic field is attributed to colossal magnetoresistance (CMR). We develop a model for the CMR in a thin film in oblique magnetic field. Our contactless measurements verify that CMR in LSMO films is nearly isotropic. (3) The low-field microwave absorption is associated with the ferromagnetic resonance in the multidomain state and yields information on domain size.