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## SCES investigation via X-ray magnetic resonant techniques

*Friday, 16 September 2011 12:35 (2 minutes)*

After pioneering experiments on the interaction between X-rays and spins, the advent of third generation synchrotron machines has definitely shown the versatility of Magnetic Resonant Elastic and Inelastic X-Ray Scattering in the investigation of magnetic materials.

In particular, the techniques benefits of chemical selectivity, high Q resolution and sensitivity to the angular part of magnetic moment to access fundamental microscopic information, resulting in powerful tools, complementary to neutron diffraction.

Nowadays, the investigation of complex and elusive magnetic structures, even in externally applied electric and magnetic fields is possible.

Results obtained on forefront scientific cases as frustrated magnetic systems [1], collinear and cycloidal multi-ferroics [2] are presented. In particular, magnetic structures solution, phase diagrams definition and magnetic interaction patterns determination have been successfully achieved, directly contributing to the understanding of key mechanisms active in the aforementioned classes of compounds.

[1] Phys. Rev. B 77 (2008) 140403R, Phys. Rev. B 78 (2008) 100406R

[2] Phys. Rev. B 78 (2008) 104407, Phys. Rev. B 83 (2011) 054438

### Please specify the session

Resonant Elastic and Inelastic X-ray Scattering

### Please specify poster or talk

Talk

**Primary author:** Dr MAZZOLI, Claudio (Politecnico di Milano)

**Presenter:** Dr MAZZOLI, Claudio (Politecnico di Milano)

**Session Classification:** Poster session II and lunch

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