First-principles approach to lattice-mediated magnetoelectric effects

JORGE İNİGÜZ, ICMAB–CSIC — I will present a first-principles scheme for the computation of the magnetoelectric (ME) response of magnetic insulators. The method focuses on the lattice-mediated part of the magnetic response to an electric field, which can be expected to be the dominant contribution in materials displaying a strong coupling, thus avoiding the technical difficulties associated to the treatment of a purely electronic ME effect. I will describe results of calculations for Cr₂O₃ and other model magnetoelectric compounds.

1Supported by MaCoMuFi (STREP_FP6-03321).