

CEA/DSM

SPEC

Séminaire

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Relaxor ferroelectrics

Relaxor ferroelectrics show cooperative kinetic freezing into a glassy state in which ferroelectric order is confined polar nanoregions (PNR) with dimensions of order 10 nm. One of the central questions is whether the glassy effects come from interactions among PNR or some other effect. Noise and aging experiments indicate that glassy order probably arises on a scale small compared to the PNR, in cubic relaxors. We present evidence that various spinglass-like effects arise from unit-cell scale polarization components orthogonal to the PNR polarization, somewhat like in re-entrant xy spinglasses. One dramatic confirmation is that in cubic relaxors spinglassy aging persists deep in the frozen state, but not in uniaxial relaxors.

Orme des Merisiers
Salle Claude Itzykson, Bât. 774
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