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Title:

Interface properties of oxide heterostructures

Abstract:

Heterostructures of complex oxides are very interesting due the interplay between charge, spin, orbital and lattice degrees of freedom.

In this talk, I will discuss the properties of two different oxide interfaces; (a) $\text{YMnO}_3/\text{LSMO}$ where a large vertical shift in the hysteresis loop is observed, which is explained by the formation of an unusual ferromagnetic phase of YMnO_3 at the interface by density functional theory, (b) $\text{SrRuO}_3/\text{SrTiO}_3$ where peculiar features are observed in electronic transport across the ferromagnetic phase transition.

Our ab initio calculations elucidate the phenomena with the analysis of structural and electronic reconstructions at the interface.