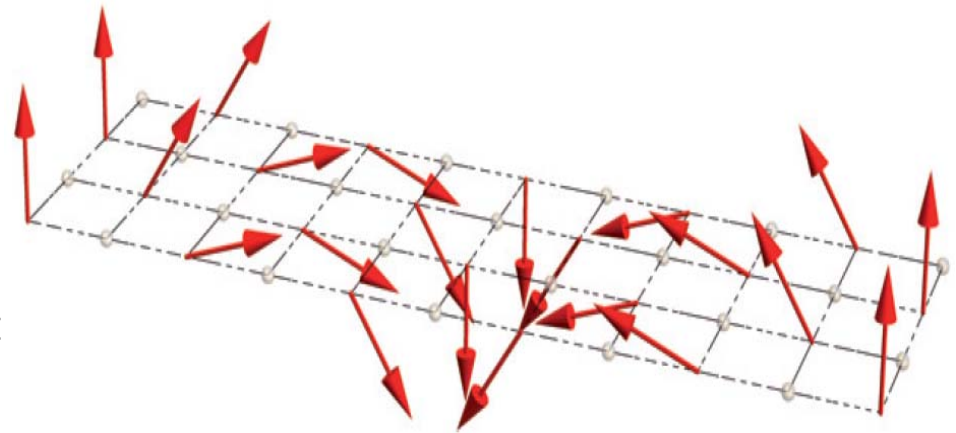


Chiral magnetism at oxide interfaces

Spiral magnetism at the interface of two non-magnetic oxides

- LaAlO_3 and SrTiO_3 are two well known non-magnetic insulators, but when LaAlO_3 is deposited on SrTiO_3 to form a clean $\text{LaAlO}_3/\text{SrTiO}_3$ interface, the interface becomes an ultra-thin sheet of conductor.
- Even more surprisingly, the interface exhibits unusual magnetic properties, but the origin of the observed interfacial magnetism is under debate.
- Researchers at the CEM have shown that the magnetism at the $\text{LaAlO}_3/\text{SrTiO}_3$ interface can be explained by symmetry of electronic structure and spin-orbit coupling, which lead to chiral interactions and give rise to a spiral magnetism
- The chiral interactions can lead to exotic spin textures like skyrmion crystals which are promising for future electronic devices with ultralow energy consumption.
- Our results can explain the previously controversial experiments on magnetization observed at the $\text{LaAlO}_3/\text{SrTiO}_3$ interfaces.



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Authors: S. Banerjee, O. Erten and M. Randeria. Affiliation: The Ohio State University

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