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Charge reorganization in LaMnO3/LaNiO3 superlattice interfaces FEDERICO IORI, ALEXANDRE GLOTER, Universite' Paris Sud - CNRS, UNRAVEL PROJECT TEAM, STEM GROUP TEAM — Functional properties of oxide heterostructurecan recently be controlled and tuned through the electronic and structural mismatch at the interface. Artificial superlattices thin film can thus present complex magnetic structure at the interface different from their corresponding bulk building blocks. In this scenario when an antiferromagnetic buk LMO and the paramagnetic bulk LNO are combined in thin filmssuperlattices, LaMnO3/LaNiO3, strong exchange bias, new metal-insulator transition or antiferromagnetic order at the interface appear. In this work we study by ab initio Density Functional Theory how the induced magnetic moments in LNO films in LMO/LMO (111)-oriented can lead to charge transfer and reorganization at the interface among the Ni and Mn metal ions for different periodicities of the superlattices (3/3, 5/5, 7/7) and how it is possible to control them through atomic intermixing at the interface.

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