Contribution ID: **93** Type: **Talk**

Inward shift in the spin wave dispersion of a stripe discommensurated Pr-based 214-nickelate

Tuesday, 8 December 2020 15:00 (25 minutes)

Magnetic excitations in the spin-stripe phases of *La*-based *214*-nickelates have been vigorously explored using INS for almost last three decades and still have remained an exciting research field, especially to understand their differences yet of their structural similarities with high-T_c *214*-cuprates. In view of the reported two-dimensional antiferromagnetic nature, out-of-plane magnetic excitations are generally not expected in *214*-nickelates. From the INS measurements of magnetic excitations in a stripe discommensurated $Pr_{3/2}Sr_{1/2}NiO_4$ with magnetic incommensurability $\epsilon = 0.4$, here we present very compelling evidence for a sizable out-of-plane interaction ($\sim$2.2 meV) which was crucial to explain the observed shift of the spin wave dispersions towards the magnetic zone centers.

Reference: A. Maity, R. Dutta, and W. Paulus, Phys. Rev. Lett. 124, 147202 (2020).

Primary author: MAITY, Avishek

Co-authors: Dr DUTTA, Rajesh (Institut für Kristallographie, RWTH Aachen University); PAULUS, Werner (Université de Montpellier, Sud de France)

Presenter: MAITY, Avishek

Session Classification: MLZ Users 2020 - Quantum Phenomena

Track Classification: UM: Quantum Phenomena