

Abstract Submitted
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Probing magnons with RIXS¹ LUCAS AMENT, Lorentz Institute, GIACOMO GHIRINGHELLI, Politecnico di Milano, MARCO MORETTI SALA, LUCIO BRAICOVICH, JEROEN VAN DEN BRINK — Resonant Inelastic X-ray Scattering (RIXS) at the copper L and M edge can probe single spin-flips, which makes it possible to probe the dispersion of magnetic excitations (for instance magnons) of cuprates such as the high T_c superconductors [1]. The cross section factors into a local, atomic spin flip scattering amplitude and a momentum dependent factor describing the final state excitation. Recently, the single magnon dispersion has been measured and found to coincide with earlier neutron measurements [2]. For the cuprates, these results put RIXS as a technique on the same footing as neutron scattering, opening a new window for experiments on this class of materials.

[1] L.J.P. Ament, G. Ghiringhelli, M. Moretti Sala, L. Braicovich, and J. van den Brink, PRL **103**, 117003 (2009)

[2] L. Braicovich, J. van den Brink, V. Bisogni, M. Moretti Sala, L.J.P. Ament, N.B. Brookes, G.M. De Luca, M. Salluzzo, T. Schmitt, and G. Ghiringhelli, arXiv:0911.0621

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