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Signatures of correlation in transition metal oxides MATTEO GATTI, LSI, Ecole Polytechnique, France, MATTEO GUZZO, Humboldt-Universität zu Berlin, Germany, LUCIA REINING, LSI, Ecole Polytechnique, France — Photoemission satellites are a genuine fingerprint of electronic correlation that cannot be interpreted within the quasiparticle band-structure picture. Here we show that they can be understood in terms of the coupling between different elementary excitations, as in the case of plasmon sidebands. Using examples from different correlated materials, we discuss how this coupling can be explained by advanced calculations based on first-principles many-body perturbation theory that combine GW-like approximations for the self-energy with the cumulant expansion of the Green's function [1-3]. This approach is not limited to low-energy satellites, but allows for a consistent explanation of signatures of correlation over a wide range of binding energies. [1] M. Guzzo *et al.*, Phys. Rev. Lett. **107**, 166401 (2011). [2] M. Gatti and M. Guzzo, Phys Rev B **87**, 155147 (2013). [3] M. Gatti *et al.*, Phys. Rev. Lett. **114**, 116402 (2015).

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