## Satellite structure in electronic spectra

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To describe electronic correlations is one of the big challenges of condensed matter theory. In particular, we will discuss correlation from the point of view of many-body perturbation theory, starting from the GW approximation<sup>1</sup> and going beyond. We will focus, though not exclusively, on the role of the screened Coulomb interaction W; indeed it is simply the screening of the Coulomb interaction that makes the difference between Hartree-Fock and GW. Static screening gives rise to a renormalization of energies. Dynamical screening contains additional excitations that can be seen e.g. as satellites in photoemission spectra. The main point of this talk will be to compare different approaches to calculate and interprete satellites. Several systems will be used for illustration, including models, simple semiconductors, and transition metal oxides.

[1] L. Hedin, Phys. Rev. **139**, A796 (1965).