

Charge Ordering as seen by RXS

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Electronic orderings in the form of charge and orbital ordering are certainly one of the most intriguing subjects in contemporary solid state physics. There are just a handful of experimental techniques which are directly sensitive to the microscopic properties of these elementary orderings and resonant X-ray scattering (RXS) is certainly one of the best suited techniques. In this paper we will discuss charge ordering issues revealed through (i) the analysis of our RXS data on NaV_2O_5 and Fe_3O_4 , (ii) *ab-initio* calculations of the observed spectra and (iii) analysis of the symmetry of the structure factor tensors. Finally, and in view of the rather large amount of contradictory results issued from the resonant scattering technique, we will try to shed light on the data analysis by pointing out what can (and can not) be measured with this technique.