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XAS (X-Ray Absorption Spectroscopy) spectroscopy: state of the art and some applications in material science

martedì 8 giugno 2021 10:40 (20 minuti)

X-Ray Absorption spectroscopy (XAS) is a powerful tool to investigate both the electronic and geometrical structure around to a well defined absorbing atom belonging to any type of material, from biological samples to condensed matter. In this talk I will present a general theoretical scheme to analyze the experimental data from the edge up to very high energy. This scheme, based on the Multiple Scattering theory, allows a complete recovery of the experimental data, and, in particular, I will discuss a new method to get structural quantitative information using the low energy part of the spectrum, starting from the edge. This procedure, that has been recently proposed in the literature, allows a complete three dimensional determination of the local geometry around the photo-absorber in many different systems. Some chemical and biological applications will be also presented in details.

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Classifica Sessioni: Session