

X-RAY ABSORPTION SPECTROSCOPY
WITH APPLICATION TO RARE EARTHS

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In this presentation we shall give an introduction to the technique of X-ray absorption spectroscopy (XAS).

In a first step, we shall focus on the basic theoretical description of XAS with a specific attention dedicated to the selection rules and we shall also review the theoretical framework necessary for the description of the electronic structures of the rare earths in the context of XAS. Secondly, the instrumental technique will be shortly outlined to stress its potential. Thirdly, applications where the polarization of X-rays is used shall be detailed with specific attention to the magnetic properties of 4f elements, to crystal field effects, and to Kondo transitions. Finally, if time permitted we shall enlarge the picture to recent spectroscopic experiments on actinides.