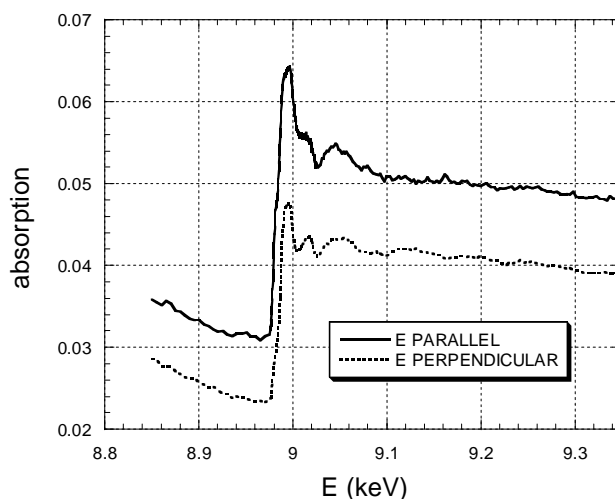


## Underpotential deposition (UPD) of a Cu submonolayer on Pt(111): in situ XAS study

### Experiment CH 1498

With this experiment, realized at the end of June 2003, we successfully recorded the absorption spectra of UPD Cu sublayer on Pt(111) in perchloric acid solution in presence of chlorides. As figure 1 shows, in both polarization modes ( $E //$  crystal surface and  $E \perp$  crystal surface) the XAS spectra are characterized by a good signal/noise ratio. As expected, the two spectra are quite different, due to the anisotropy of the system. For  $E //$ , the absorption spectrum presents a pre-peak near the edge energy: as the results obtained for the full layer deposition [1] indicate, this can be the signature of the presence of Cu near-neighbors. The quantitative data analysis is in progress, but not yet terminated, as the measurements have been realized very recently.



**Figure 1:** In situ X-ray absorption spectra for a Cu sublayer obtained in  $1\text{M HClO}_4 + 10^{-2}\text{M HCl} + 3 \cdot 10^{-4}\text{M Cu}^{++}$  at  $0.3\text{ V(SCE)}$ : parallel and perpendicular polarizations

Unfortunately, due to the difficulties in realizing this kind of in situ experiment, during the allocated beam time we could not complete our study in the case of sulfuric acid solution in presence of chlorides.

That's why we will ask for further beam time, submitting our project to the scientific committee of the ESRF.