



Institut de Minéralogie et de Physique des Milieux Condensés
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SÉMINAIRE

Lundi 2 mai, 10h30

*Salle de Conférence, 4ème étage, Tour 22-23, Salle 1
IMPMC, Université P. et M. Curie, 4, Place Jussieu, 75005 Paris*

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STRESS AND PRESSURE: TWO DIFFERENT WAYS TO DEFORM CRYSTALS

Stress is a tensor, where each component defines the direction and magnitude of external force. Pressure is a special case of stress, where all the off-diagonal components vanish and the diagonal components have the same magnitude. Pressure can only be defined under hydrostatic conditions. In high-pressure experiments, however, we often assume that we apply "pressure" to the specimen. This is true, if the system is under hydrostatic conditions. At very high pressures, on the other hand, all the materials become solid except at high temperatures. One cannot achieve ideal hydrostatic conditions any more, and it becomes important to characterize complicated stress field. In my talk, I describe our recent high-pressure x-ray diffraction experiments on Au, where the effect of non-hydrostatic compression plays an important role to constrain the equation of state. Several trials to achieve quasi-hydrostatic conditions and characterize non-hydrostatic stress conditions will be presented.