

**Mercredi 11 février 2015 à 14h**

**Salle de réunion du SRMP – Bâtiment 520 - Pièce 109**

## ***On the mechanical response of Magnesium and its alloys: multiscale perspectives***

***Laurent Capolungo***

*Georgia Institute of Technology  
George W. Woodruff School of Mechanical Engineering  
&  
School of Nuclear and Radiological Engineering  
&  
UMI GT-CNRS 2958*

Magnesium and its alloys exhibit a particularly complex and interesting mechanical response characterized by a high level of plastic anisotropy resulting from the simultaneous activation of both slip and twin deformation modes. This gives rise to the development of relatively complex microstructure.

The author will present some of his most recent work aiming at providing a multiscale understanding of the processes of (i) latent hardening resulting from dislocation interaction, (ii) twin nucleation, (iii) twin growth and (iv) twin interactions. The strategy employed relies on the use of atomistic simulations, discrete dislocation dynamics and mean-field micromechanics. In parallel, to provide guidance for modeling developments, the author will present a novel automated image recognition tool allowing for the detection of twins in EBSD map so as to probe for statistically meaningful links between microstructure evolution and loading condition.

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DEN/DANS/DMN Service de Recherches de Métallurgie Physique  
Centre de Saclay – Bât. 520 - 91191 Gif-sur-Yvette Cedex – France

