



Spring School

“ Modelling of corrosion for Nuclear Reactors ”

INSTN CEA Saclay, March 31-April 4, 2014

- Introduction to nuclear corrosion
- Overview on Phase Diagrams
- Effects of corrosion on the mechanical properties using electronic structure theory
- Reactive potentials. Metal / water interface
- Oxidation mechanisms and passive layers
- DFT MC corrosion modelling
- Stress corrosion cracking and electrochemistry
- Modelling of oxides layers using EKINOX code
- Flow accelerated corrosion
- Stress corrosion cracking initiation mechanisms
- Statistical modeling of SCC & IASCC initiation
- Stress corrosion cracking propagation mechanisms
- Grain boundaries behavior and mechanical stress
- Modelling of SCC & IASC
- Stress corrosion cracking and hydrogen embrittlement
- Multiscale modeling of materials
- Multiscale contribution on long-term prediction of corrosion for nuclear reactors

Computer Sessions with Practical Training using relevant softwares:

- Pourbaix diagrams modelling
- Reactive potentials modelling
- Oxides layers modelling with EKINOX
- DFT MC modelling of corrosion
- Statistical modelling of stress corrosion cracking
- IASCC modelling with PERFORM platform

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Registration deadline: February 21st, 2014

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