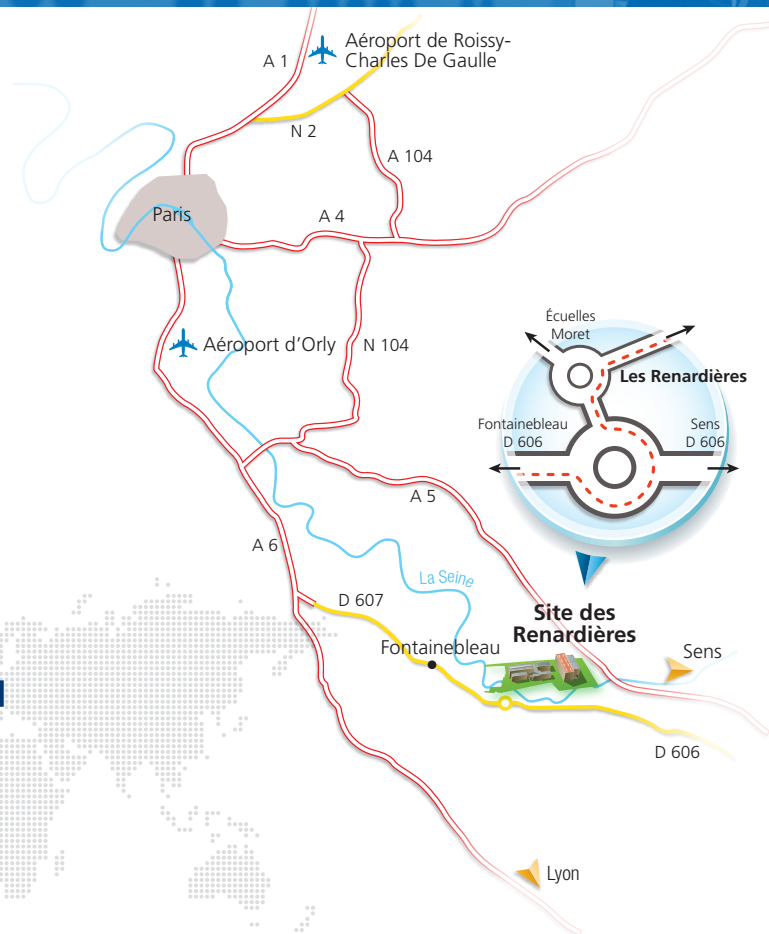
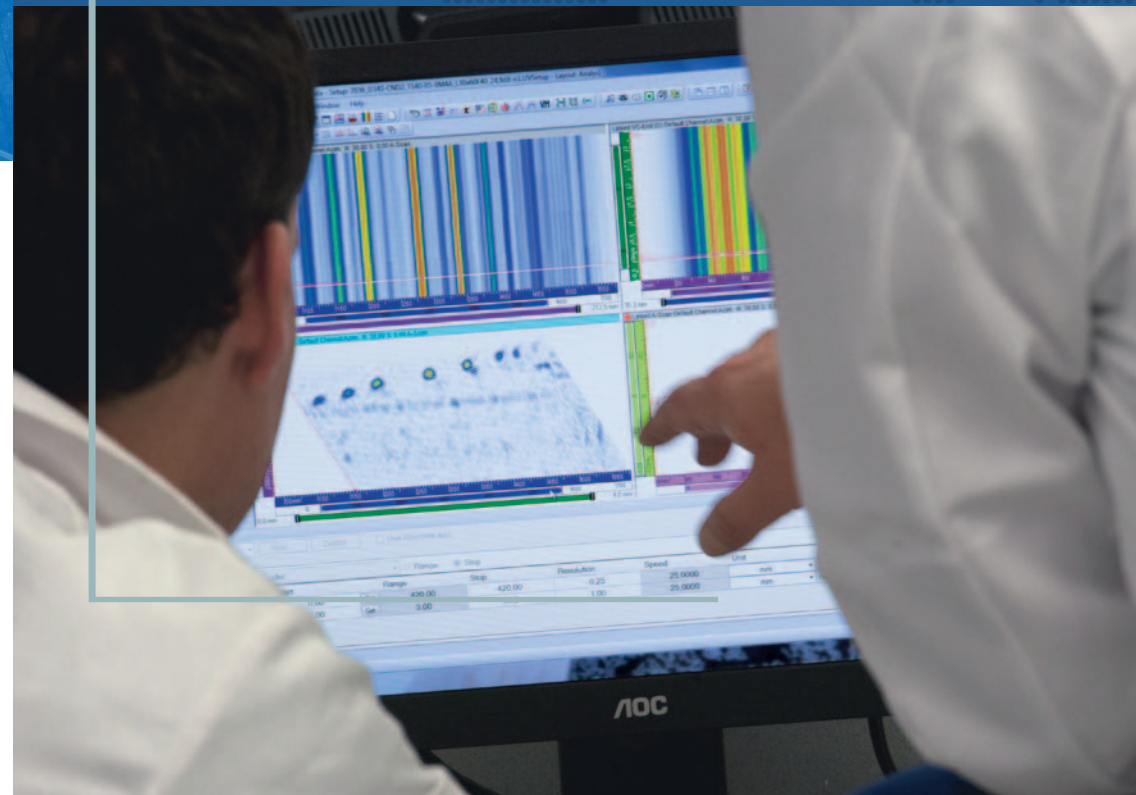


First announcement



>> *Save the date*

**Training course on Uncertainty Management
in Computational Materials Science**

May 23-25, 2018 - MAI - Moret-sur-Loing - France

The Materials Ageing Institute is a utility-oriented research center founded in January 2008 and financed by Electricité de France (EDF), the Tokyo Electric Power Company (TEPCO), the Kansai Electric Power Company (KEPCO) and the US Electric Power Research Institute (EPRI). The key purpose of MAI is to direct efforts in research and development towards ageing of materials used in electrical power facilities.



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Members : EDF (F), EDF Energy (UK), EPRI (USA), Kansai (J), CGN (CN), REA (RU), TEPCO (J), CRIEPI (J), MHI (J), CEA (F), AREVA (F).

Photos : EDF Médiathèque Design : HeLooSen/ice +33 1 64 70 50 20





Scope and Objective

The recent development in numerical simulation has enabled researchers and engineers to handle more and more realistic models of materials and structures. However, the precision of the simulation results can be affected by uncertainties in the model parameters, which are due either to a lack of knowledge or to the intrinsic variability of the physical quantities.

The training course is aimed at providing attendees with universal methodologies and practical computational tools to take into account input parameters uncertainties and to study their impact on the response quantities of interest. The following topics will be addressed:

- Basic probability and statistics
- Methodology of uncertainty management
- Dispersion analysis
- Reliability analysis
- Sensitivity analysis
- Data assimilation for model calibration and improved prediction
- Metamodelling (polynomial chaos expansions and Kriging)
- Modelling of random fields
- Metrology and reliability of experimental measurements
- Use of the software OpenTURNS for uncertainty management
- Use of the software ParaView for handling materials science data
- Risk estimation of a complex system

Research-engineers will also present some case studies of uncertainty management applied to industrial problems in materials science.

Target audience

- Research Engineers from EDF R&D, engineers from EDF Divisions, MAI partners.
- Limited number of seats available.

Contact

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Registration fees

The course is free of charge for MAI members (including Research Engineers from EDF R&D). For academic attendees (researchers, students, interns), the registration fees amount to 250 €. For other attendees, the fees amount to 500 €. Lunches are included in the registration fees. All attendees are kindly requested to take care of their own accommodation travel arrangements.

