

## **Advanced computational tools for data assimilation and inverse analysis**

### Organizer:

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### Abstract:

The use of experimental data in association with simulation models has become an active research topic. Indeed, new experimental facilities (such as digital image correlation) now enable to collect a large and diversified amount of data, and these may be used to identify and validate complex models, or to enhance predictions made by simulation tools. However, many challenges dealing with data filtering, computational cost, or numerical robustness need to be addressed in order to incorporate data efficiently.

The goal of this mini-symposium is to present, in both deterministic and stochastic (Bayesian) contexts, recent fundamental advances in data assimilation and inverse methods with regards to innovative and powerful numerical approaches which emerged recently. We anticipate contributions on the following topics:

- data assimilation and real-time model updating;
- use of model reduction or multiscale approaches;
- adaptive or multi-fidelity strategies;
- analysis of full-field measurements;
- representation and propagation of model and measurement errors;
- goal-oriented model updating;
- experimental design.

### List of possible speakers:

M. Bonnet  
S. Chaillat  
F. Chinesta  
R. Cottreau  
P. Diez  
Z. Djatouti  
P. Feissel  
E. Florentin  
P. Gosselet  
F. Hild  
Y. Maday  
A. Manzoni  
Y. Marzouk  
E. Nadal  
F. Pled  
S. Prudhomme  
G. Puel  
B. Rosic  
P-B. Rubio  
J. Waeytens  
T. Wildey  
O. Zahm