

MATERIAL CHARACTERIZATION BASED ON NON-DESTRUCTIVE EXPERIMENTS AND INVERSE ANALYSIS APPROACHES

1300-INVERSE PROBLEMS, OPTIMIZATION AND DESIGN

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ABSTRACT

Since decades, the maturity of computational science and engineering has allowed us to simulate complex phenomena with attention to detail. Besides, constantly emerging measurement systems and methodologies have also led to a huge leap in experimental mechanics. These aforementioned together shall result in the boost of the collected data, either numerical or experimental. For a deeper understanding of physical phenomena through the somewhat redundant data, this mini-symposium endeavors to gather experts from both disciplines of experimental mechanics and computational science, and to promote the integration of experimental results and numerical algorithms. Particular areas of interest for this MS include, but not limited to:

- (1) Parametric identification based on non-destructive test, e.g., instrumented indentation test;
- (2) Investigation on the properties of advanced materials and additively printed parts;
- (3) Applications of dimensionality reduction algorithms to numerical and experimental data;
- (4) Innovative methods for solving inverse problem and uncertainty quantification.

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