# 6th International Conference on
# THEORETICAL and APPLIED MECHANICS (TAM '15)

### Salerno, Italy
### June 27–29, 2015

## **Special Session**

*Modelling and Numerical Simulation for Systems Engineering Applications:*
*Recent Methods in Design, Development, Monitoring, Diagnostics and Prognostics.*

### 1. CALL FOR PAPERS

Systems engineering is an interdisciplinary field of engineering that focuses on how to design and manage complex engineering systems over their life cycle. Issues such as requirements definition, reliability, logistic support, testing and evaluation, maintainability and many other disciplines necessary for the successful system design, development, implementation and decommission become more difficult when dealing with large or complex projects. To this purpose, overlapping together several disciplines, systems engineering ensures that all likely aspects of a project or a system are considered and correctly integrated into a whole. Several tools are used at various stages of the systems engineering process, depending on their application. In particular, modelling techniques and numerical simulation environments are gradually playing increasingly important roles into this process, as example in the early stages of the conceptual design, preliminary draft and development of the system, but also in the design and tuning of control or monitoring systems and development of diagnostic and prognostic algorithms.

This special session is aimed at the collection of original papers regarding innovative approaches and original examples of modelling and numerical simulation techniques applied in the different fields of systems engineering.

### 2. TOPICS COVERED

Research topics to be considered for a valid submission are all the topics related to the above description. Authors are invited to submit their original and unpublished works relating to new methods to approach systems engineering issues such as (but not limited to):

- Complex mechanical systems
- Dynamic simulation of mechatronic system
- Fault detection/evaluation methods
- Mechatronics
- Model-based approach diagnostics
- Modelling techniques
- Monitoring systems
- Multi-domain models
- Nonlinearities
- Numerical simulation
- Prognostics
- Simplified models
- Systems design/optimization

## 3. GUEST EDITORS

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