

Advanced methods in cyber-physical systems: toward internet-of-thing of digital production

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Key words: Computational Mechanics, Digital Production, Inverse Problem, Artificial Intelligence, Data-Driven, Reduced Order Method, Data-Centric, Optimal Design, CyberPhysics

ABSTRACT

In the manufacturing industry, material science, energy system and clinical applications, a new range of opportunities arises due to the integration of internet of things, allowing to seamless process chains and connect the controller with multiphysics virtual simulation. The interoperability among collected data from sensors, intelligent devices and the smart algorithm is the basis for future automated and digital production.

In order to integrate data and model, versatile numerical methods and Artificial intelligence architectures have been developed to identify the main governing parameters of the model, design scheduling of industrial process, accelerate multiphysics simulation and optimal positioning of sensor placement.

The mini-symposium aims to bringing together engineering and researcher from the applied e.g. industry and scientific community and providing a lively exchange of ideas regarding state of art and future needs for data-driven method, learning methods and AI in digital production.

Therefore, topics of the mini-symposium on "Advanced methods in cyber-physical systems: toward internet-of-physics of digital production" in a broad sense will include:

- Artificial Intelligence
- Data-Driven Learning methods (e.g. ROM and AI) for accelerating multiphysics models
- Industrial application
- Control Theory for multi physics system
- Data-driven surrogate modelling