



Resilience of Cyber-Physical Production Systems: Issues, modelling, implementation and evaluation

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Short presentation:

Cyber-Physical Production Systems (CPPS) are now the trend towards which production is moving. Considering the complexity and the uncertainty characterizing their operational environments, resilience becomes a key requirement that should be considered in addition to the traditional performance and quality of service criteria (such as flexibility, responsiveness, reliability, etc.) used in the design, management, and operation of these systems. Therefore, this session aims to highlight the research on CPPS resilience. Its goal is to carry out a mapping of the works related to resilience and its application in different domains and scientific disciplines. The fourth industrial revolution promises enhanced connection between smart systems and people and becomes thus the appropriate context to make systems more resilient. The challenges of resilience in CPPs have also captured the interest of the SOHOMA community. Similarly, this session will serve as a forum emerging interdisciplinary research relevant to resilience and performance improvement of CPPs within the Industry 4.0 context.

In accordance with the overall above-mentioned theme of resilience, possible topics may include:

- Resilience based simulation
- Resilience measurement approaches
- Information systems
- Decision-making systems
- key enabling technologies for resilience measurement and deployment
- CPPs performance improvement
- Multi-criteria analysis including resilience
- Resilience and robustness in Scheduling problems
- Uncertainty handling
- Production logistics and intralogistics
- Logistics engineering and Material Handling Technologies



Considering the theme of the workshop, research that applies the service-oriented, holonic and/or multi-agent systems approaches to the human integration challenge will be of particular interest to the SOHOMA community. Concept, position and short review papers, as well as papers reporting on case study implementations, are welcome.

Keywords: Resilience; Cyber-Physical Production Systems (CPPS); Simulation; Performance metrics; Industry 4.0

Important dates:

- Full paper submission: 15 July 2021
- Notification of acceptance: 15 September 2021
- Final, camera-ready paper submission: 15 October 2021
- Early registration and fee payment: 1 November 2021
- Workshop: 18-19 November 2021