

Resilience of Manufacturing Systems in the new industrial area: Issues, modelling, implementation and evaluation

Sondès Chaabane, LAMIH UMR CNRS 8201, Université Polytechnique Hauts-de-France, France (sondes.chaabane@uphf.fr)

Lamia Berrah, LISTIC – Polytech’Anancy-Chambéry, France (lamia.berrah@univ-smb.fr)

Virginie Goepf, ICUBE UMR CNRS 7357, INSA de Strasbourg, France (virginie.goepf@insa-strasbourg.fr)

Dmitry Ivanov, Berlin School of Economics and Law, Germany (dmitry.ivanov@hwr-berlin.de)

Short presentation:

Manufacturing companies evolve in ever complex and uncertain environments. Considering this fact, resilience becomes a key requirement. It should be considered in addition to the traditional performance and quality of service criteria (such as flexibility, responsiveness, reliability, etc.) used in designing, managing, and operating production systems such as Cyber Physical Production Systems (CPPSs). Therefore, this session aims to highlight the research on the resilience of production systems. Its goal is to map the works related to resilience and its application in different domains and scientific disciplines, emphasising the link between risk and robustness. Industry 5.0 puts resilience at the heart of its concerns requiring to make it come true. This session will serve as a forum for emerging interdisciplinary research relevant to resilience and performance improvement of manufacturing systems within the Industry 5.0 context.

Following the overall theme of resilience mentioned above, possible topics may include:

- Resilience-based simulation
- Resilience measurement approaches
- Framework for resilience
- Information systems
- Decision-making systems
- Key enabling technologies for resilience measurement and deployment
- Manufacturing system and CPPs performance improvement
- Multi-criteria analysis including resilience
- Resilience and robustness in Scheduling problems
- Uncertainty handling
- Risk management

Keywords: Resilience; Manufacturing system, Cyber-Physical Production Systems (CPPS); Simulation; Performance metrics; Industry 5.0

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