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NUMERICAL MODELLING FOR SUSTAINABLE INNOVATION

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ABSTRACT

The main purpose of this invited session is to create an effective bridge between the numerical modeling of evolutive problems and their feasibility in facing problems of industrial sustainability and innovation systems. It is well known that mathematical modeling offers tools able to describe production systems with accuracy and robustness, as well as to follow their space-time evolution, even in the long term. Similarly, it is well known that numerical modeling assumes a role of absolute importance for the simulation and dynamical analysis of complex models from which qualitative and quantitative information is to be derived for a better understanding of the real processes described by these models. The scientific contributions characterizing this session will have a joint focus on both methodological and industrial aspects. A brief tentative list of topics covered in this session is given by the following items: numerical modelling for sustainable supply chains; retarded dynamics modelling bottlenecks, bullwhip effects and latency in production processes; numerical modelling for stochastic useful to describe the environmental capacity in supply chains dynamics; simulation of the dynamics of the deterioration of materials; numerical modelling in industrial processes for healthcare.