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Invited session on

Balancing and Sequencing of Assembly and Machining Lines

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Proposed by:

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Short presentation: The aim of this session is to present new approaches and methods for the design, balancing and sequencing of assembly and machining lines. Nowadays, production systems are characterized by short product life-cycle time, high levels of automation, emergence of new manufacturing equipment and technologies, and high investment. These attributes lead to new assembly line design problems and more frequent design and redesign needs, and hence to the demand for new methods and decision-aid tools. We will focus on studies that concentrate on assembly and machining line balancing and sequencing approaches for cost or profit optimization. Cost based models mainly address long-term investment or short term operating costs and revenues are integrated in the profit based ones. Main relevant cost categories are wages, material and inventory expenses, price of equipment and maintenance, set-up and idle time costs and the penalties of delays. Our scope covers single criterion and multi criteria optimization approaches. We encourage also submissions on development of decision support systems (DSS) and their integration in product life cycle management (PLM) applications.

Keywords: assembly lines, machining lines, line balancing, process planning, equipment selection, car sequencing, scheduling, discrete optimisation, decision-aid systems

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