MIM 2019 OPEN INVITED TRACK ON:

Human factors in production and logistics systems of the future

Organized by:

Fabio Sgarbossa	(University of Padua, Italy)	fabio.sgarbossa@unipd.it
Daria Battini	(University of Padua, Italy)	daria.battini@unipd.it
Christoph H. Glock	(Technische Universität Darmstadt, Germany)	glock@pscm.tu-darmstadt.de
Eric H. Grosse	(Technische Universität Darmstadt, Germany)	grosse@pscm.tu-darmstadt.de
W. Patrick Neumann	(Ryerson University, Canada)	pneumann@ryerson.ca

Despite the opportunities the automatization of industrial and logistic systems offers, many companies still rely on human work in many areas. Most planning models that have been proposed in the past to support managerial decision making in industrial and logistic systems have neglected the specific characteristics of human workers, which often led to unrealistic planning outcomes or work schedules that may even be harmful to workers employed in the system. To guarantee a high level of productivity and efficiency and to make sure that decision support models reflect reality as much as possible, it is necessary to consider human factors (synonymous here with ergonomics) in designing industrial and logistic systems that are reliable, efficient, and safe workplaces. Even though recent research has started to integrate human factors issues into decision support models – for example by modelling learning effects or human energy expenditure – there still seems to be a large gap in the literature concerning the development of decision support models for industrial and logistic systems that take account of the interaction between the human worker and the design of the logistics system. The latter can, unlike the worker, be heavily influenced by the system designer.

Generally, human factors (perceptual, mental, physical and psychosocial aspects) determine the performance of industrial and logistic systems to a large extent if human operators are employed. This aspect becomes more challenging in light of demographic changes, which will likely put human factor-related issues in logistics – such as the risk of developing musculoskeletal disorders in labor-intensive work environments, for example – on top of the agendas in many companies. In addition, the consequences of using industry 4.0 technologies that assist operators in their manual work, such as augmented reality, adaptable workstations or cobots, are not yet fully understood in light of human performance and errors.
This session aims at investigating the development of innovative approaches for the integration of human factors in system design to create human-centered production and logistics systems of the future.

The main topics should concern analytical models, quantitative approaches and simulation studies, but also qualitative approaches and case studies that give insights into behavioral issues and the interactions of humans and new technologies in industrial and logistic systems. Topics may include, but are not limited to:

- Ergonomics in operations and logistics management
- Learning and forgetting in industrial systems
- The impact of system design on human errors
- Reduction of injury risks in manual operations
- The impact of demographic changes/ ageing workforce on industrial systems
- The impact of technical assistance systems on manual work in industrial systems
- Opportunities of industry 4.0 for human-centered production and logistics systems

INVITATION CODE: qtmh8

Regular papers (6 pages) and extended abstracts (1-2 pages) are welcome.
When you submit your paper to the IFAC system, you will be required this ID number in order to associate your paper to the invited open track:
https://ifac.papercept.net/conferences/scripts/start.pl

IMPORTANT DATES:

Draft papers submission deadline:	**15 December 2018**
Notification of acceptance:	**20 February 2019**
Full papers submission deadline:	**15 March 2019**
Early registration deadline:	**31 March 2019**
Late registration deadline:	**1st April 2019**
Conference date:	**28-30 August 2019**

Best regards,
Fabio Sgarbossa, Daria Battini, Christoph Glock, Eric Grosse, Patrick Neumann

Proposal submitted to 9th IFAC Conference on Manufacturing Modelling, Management and Control. Received June 19, 2018.