

## Special Issue on Human and Environmental Aspects in Logistic and Production Systems Design

# CALL FOR PAPERS

Nowadays, it is increasingly required to design complex engineering systems—such as logistic and production systems—by means of mathematical models that take into account human and environmental aspects, as they heavily affect the overall performance of these systems. As humans are almost fully involved in the operation of every logistic and production system, human factors such as learning/forgetting phenomena and human reliability in process control activities turn out to be a strategic leverage in directing design and managerial efforts with the aid of mathematical models. However, every anthropic activity involved in the operation of logistic and production systems has its own impact on the environment. This question has been largely recognized by states, governmental agencies, and companies around the world. In fact, many incentives and cost mechanisms to limit the environmental impact of human activities, such as the European Union Emission Trading System and “carbon tax” systems, have been introduced. It is therefore evident that mathematical models developed to characterize such engineering systems must consider environmental issues.

Despite the relevance of these factors, they have not been adequately included so far into mathematical models intended to support the design and management of logistic and production systems, neither in an integrated manner nor individually. It is thus required that the mathematical modelling and optimization tasks of such engineering systems be carried out including human and environmental aspects.

This Special Issue aims to bring together contributions from researchers applying mathematical tools to logistic and production systems engineering problems, in order to stimulate the continuing effort to include human and environmental aspects into mathematical modelling and optimization of such systems. Both high-quality original research and review papers are welcome.

Potential topics include but are not limited to the following:

- ▶ Mathematical modelling and optimization of
  - ▶ Closed-loop supply chain systems
  - ▶ Production-inventory systems with defectives and inspection errors
  - ▶ Production-inventory systems with GHG emissions and/or workforce learning/forgetting
  - ▶ Multiechelon inventory systems with routing decisions including GHG emissions
  - ▶ Warehouse order picking systems considering the effect of worker learning and/or fatigue
- ▶ Novel mathematical formulations of and/or innovative optimization approaches to
  - ▶ Workforce scheduling problems considering learning and/or fatigue
  - ▶ Scheduling problems of production systems including energy aspects and/or workforce learning/forgetting
  - ▶ Vehicle routing problems with carbon emissions
  - ▶ Routing problems of alternative fuel vehicles

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/mpe/healp/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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