



Metaheuristics for industry 4.0

After the development of mechanization and steam engine in the 18th century, of electricity and mass production in the late 19th century, and of electronics and manufacturing automation during the 20th century, the foundations of a fourth industrial revolution appear in recent years.

The concept of industry 4.0 or factory 4.0 is based on the concept of smart factory, characterized by production systems completely interconnected from the inside world to the outside world.

The optimization of productivity, the design of more flexible and more reactive production lines, reducing waste, the prevention of errors and delays, enhanced logistics and inventory management ... These are just few points that demonstrate all the challenges associated with industry 4.0.

Metaheuristics are methods that have repeatedly demonstrated their ability to solve difficult optimization problems, and in particular industrial problems. Their ability to easily integrate industrial constraints, to be able to provide quickly adapted and efficient solutions, are qualities that will allow them to remain competitive in solving new industrial challenges.

The goal of this track is to make cartography of research activities in the area. This concerns both works dealing with classic industrial examples, as well as prospective works that incorporate issues of the industry 4.0.

The topics covered by this track may be, but are not limited to :

- practical applications of metaheuristics
- hybridization of metaheuristics with evaluation methods
- matheuristics, hybridization with optimization methods
- problem decomposition
- location routing problems, inventory routing problem,
- digital supply chain
- ...

This track is proposed by the French Research Groups META and ORIGIN.

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