



Mathematical Problems in Engineering

Special Issue on **Scheduling with Time-Dependent Processing Times** **2015**

CALL FOR PAPERS

Nowadays, customer demand for order variety, short-lead time, and fast delivery has a great impact on operations management problems such as capacity planning, production scheduling, order sequencing, vehicle routing, and bin packing. Addressing the related problems of operations scheduling is even more crucial than ever. For many years, most scheduling research has focused on problems with deterministic parameters. However, many real-life systems exhibit dynamic behaviour characterized by a set of dynamic parameters. This fact has been recognized in control theory, systems engineering, and other disciplines. Scheduling with time-dependent processing times is a means to take this into account in scheduling research. Research on time-dependent problems has spawned a new area in the scheduling field. It has uncovered many new properties that are absent in classical scheduling theory and led to new methodological approaches to algorithmic design and NP-hardness proof. Due to its theoretical challenge and practical value, scheduling with time-dependent processing times has attracted a considerable amount of research attention in the literature.

Devoted to publishing original and significant results on “scheduling with time-dependent processing times,” this special issue will cover a wide range of topics, spanning new theory development, innovative modelling and analysis, fundamental methodological breakthroughs, and novel applications. A discrete mathematical approach is commonly adopted to address such problems. However, further development by such an approach is curtailed by the absence of general principles, which presents the major challenge for this line of research. Papers can be theoretical, methodological, computational, or application oriented.

Potential topics include, but are not limited to:

- ▶ Scheduling with learning effects
- ▶ Scheduling with aging effects
- ▶ New models for scheduling with time-dependent processing times
- ▶ New methods for dealing with scheduling with time-dependent processing times

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