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Minimizing costs of resource requirements in project networks subject to a fixed completion time. (English) [Zbl 0531.90049](#)

Oper. Res. 32, 89-120 (1984).

Summary: We consider the problem of minimizing the resource costs in a project network N_0 subject to a time limit for the completion of N_0 , when resource requirements per activity and costs for obtaining resources are independent of time. Our results show that the optimum is determined for all possible resource requirements and costs by certain sets of "feasible structures," which are networks that extend the precedence relation of N_0 and respect the given time limit. We characterize the least such sets, and give methods for determining them as well as for determining the optimum. Furthermore, we establish duality relations with the problem of scarce resources (minimizing project duration subject to limited resources) and characterize all "essentially different" problems.

MSC:

[90B35](#) Deterministic scheduling theory in operations research

Cited in **2** Reviews
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Keywords:

[project network](#); [feasible structures](#); [time limit](#); [duality relations](#)

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