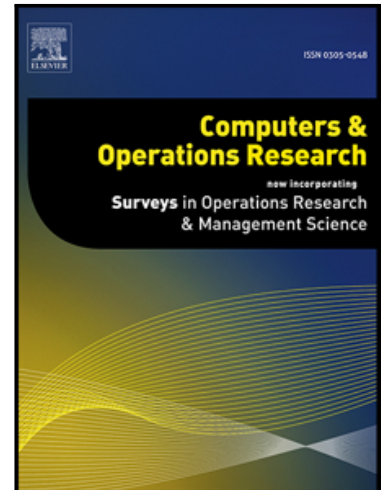


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# Routing and Scheduling on Evacuation Path Networks Using Centralized Hybrid Approach

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## Abstract

We examine the problem of finding evacuation routes from an urban building and out of its predetermined neighborhood. We propose a centralized hybrid approach for time-dependent point-to-point evacuation routing and scheduling, which is a novel spatio-temporal algorithm with discrete optimization models as sub problems. This algorithm does account for node and arc capacities and objects in transit over dynamic networks for routing and scheduling in a deterministic setting. A recent efficient method is selected for comparative analysis. For conducting this analysis, we used real case problems for finding evacuation paths from a building and out of a predetermined neighborhood of the building. The key results reveal the effectiveness of the proposed centralized hybrid approach for solving evacuation routing and scheduling problems.

**Keywords:** *Routing; Scheduling; Network flows; Evacuation.*

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