

Department of
Systems & Industrial
Engineering

Fall 2006
Seminar Series

2 PM, Thursday,
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Engineering Building
Room 301

Mobilization Decisions for Multi-Priority Emergency Response Resources and Evacuation Groups – Model Formulation and Solution

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Abstract:

This presentation discusses a model formulation and solution for simultaneous mobilization destination, traffic assignment, and departure schedule for multi-priority groups (SMDTS-MPG) for real-time emergency response in a no-notice disaster. The presented approach addresses the decision context in which multiple emergency response and evacuation flow groups with different destinations and varying priorities coexist and interact in the same traffic network, and the simultaneous mobilization strategies must consider this requirement. The proposed modeling technique and the cell transmission model (CTM)-based linear program model provides a mechanism to accomplish this goal in an intuitive and unified manner. The proposed matrix formulation of the SMDTS-MPG model permits the rapid deployment of the model to large networks. Model formulation and numerical examples will be presented in details.

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