



TRANSPORTATION SEMINAR SERIES

*Friday, November 16, 2007
4 - 5 p.m. in 240 Bechtel Engineering Center*

Yu Zhang

Ph.D. Candidate, Civil and Environmental Engineering
University of California, Berkeley

Real-time Intermodalism: A Strategy for Airline Schedule Perturbation Recovery and Airport Congestion Mitigation

Abstract: Adverse weather, equipment outages, terrorism threats and natural catastrophes cause capacity reduction or even airport closure, which lead to enormous airline disruption cost, severe airport congestions, and passenger delays. In comparison to airline internal reasons, such as mechanical failures, crew sick-offs, the aforementioned causes create more system-wide effect, especially for legacy airlines that operate hub-and-spoke networks. Thus recoveries from these airline schedule perturbations are more critical for airline operation and the performance of national airspace system. This study proposes real-time intermodalism, i.e. tactically introducing ground transport modes to substitute cancelled short-haul flight legs. Furthermore, for metroplex systems where one or more airports can be used as diversion alternatives, ground connections will be provided to link the major hub and alternative airports. Objectives are set-up to minimize airline operating costs and passenger delays, assuming airlines know the state of the system completely. Results from numerical examples and a case study demonstrate the benefit of real-time intermodalism. At the end, implementation issues are discussed, followed by some conclusions of this study.

Please join us for us for TRANSOC and GA sponsored cookie hour in the ITS library at 3:30 p.m.
ITS library is accessible for people with disabilities through the elevator in O'Brien Hall