
SEMİNER

Tarih-Saat: 25/12/2007 Salı – 14:00-15:00

Yer: Endüstri Mühendisliği Bölümü Seminer Salonu

SUPPLY CHAIN PLANNING FOR HURRICANE RESPONSE WITH BAYESIAN INFORMATION UPDATES

Selda Taşkın

Auburn University

Department of Industrial and Systems Engineering

This research introduces stochastic production/inventory control problems that are relevant to planning for potential disaster relief activities associated with hurricane events. In particular, this research is based on manufacturing and retail firms whose demand for certain products such as flashlights, batteries, and gas powered generators, is significantly influenced by the characteristics of a hurricane season and or a specific hurricane. We propose two classes of models to help these firms determine appropriate inventory levels for hurricane supplies. The first class of models leverages the forecast updates associated with a particular storm observed during the season. Our preliminary model considers forecast updates that are specific to hurricane intensity while the extended model entails predictions related to a storm's intensity and projected path. The second model class involves pre-season hurricane planning and forecast updates related to the expected number of hurricanes that will occur during the ensuing season. These problems are formulated as stochastic programs with Bayesian forecast updates, and they account for the trade-off between forecast accuracy and logistics cost efficiency as a function of time. An example problem involving real hurricane wind-speed data is presented to illustrate the methodology.