

Optimizing Integrated Production and Distribution Planning Problems in Supply Chains

Sandra D. Eksioglu

Department of Industrial Engineering
Mississippi State University

Abstract

In this talk we present a study of optimization models that integrate production, inventory and transportation decisions, in search of opportunities to improve the performance of a supply chain network. We estimate the total costs of a given design of a general supply chain network, including production, inventory and transportation costs. We consider production and transportation costs to be of fixed charge type. These problems are modeled as network flow problems with fixed charge costs. The computational complexity of the problem makes the use of heuristics solution procedures advisable. We propose network flow algorithms to find good quality solutions and good lower bounds for these problems.