On Sensitivity Analysis for Shortest-Path Dynamic Programming Models

by

In-Soo Lee

ABSTRACT

This paper concerns sensitivity analysis for shortest-path dynamic programming models. We develop a theoretical framework for this sensitivity analysis. A basic concept behind such framework is a *penalty network* that preserves the special structure of acyclic networks. Several operational propositions are derived under practical assumptions. A comparison to LP sensitivity analysis is discussed. The sensitivity analysis for deterministic production planning problems is demonstrated as an application of our approach to sensitivity analysis.