Approximation algorithms for stochastic inventory control models

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Abstract

We consider stochastic control inventory models in which the goal is to coordinate a sequence of orders of a single commodity, aiming to supply stochastic demands over a discrete finite time horizon with minimum expected overall holding and backlogging costs. We shall survey a number of recent papers in this area, focusing on recent work that relies on a new amortization technique to analyze a cost balancing approach to derive approximation algorithms for a number of models with constant performance guarantees.

The work surveyed includes joint results with Retsef Levi, Martin Pal, Robin Roundy, and Van Anh Truong, *as well as a recent paper of* Levi, Nagarajan, *and* Janakiraman.