

1112-93-262

Ananda Weerasinghe and **Chao ZHU*** (zhu@uwm.edu), Department of Mathematical Sciences, University of Wisconsin-Milwaukee, Milwaukee, WI 53201. *Optimal Inventory Control with Path-Dependent Cost Criteria.*

This work deals with a stochastic control problem arising from inventory control, in which the cost structure depends on the current position as well as the running maximum of the state process. A control mechanism is introduced to control the growth of the running maximum which represents the required storage capacity. The infinite horizon discounted cost minimization problem is addressed and it is used to derive a complete solution to the long-run average cost minimization problem. An associated control cost minimization problem subject to a storage capacity constraint is also addressed. Finally, as an application of the above results, this paper also formulates and solves an infinite-horizon discounted control problem with a regime-switching inventory model.

This is a joint work with Ananda Weerasinghe (Iowa State University). (Received August 06, 2015)