

# Seminário de sistemas dinâmicos e estocásticos

Departamento de Matemática - IMECC - UNICAMP

## Near Optimal Controls for Stochastic Inventory Systems with a Demand rate driven by a Fractional Brownian Motion..

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### Resumo:

In this talk we address the problem of optimal control in stochastic inventory model with deteriorating item and a demand rate driven by fractional brownian motion. The cost includes the sum of the holding cost of inventory and the production cost. The solution of the related optimal stochastic control problem will be carried out using the stochastic dynamic programming principle. Our methodology is based on the general stochastic optimal control theory developed by Leo, Ohashi and Souza[1]. The optimal stochastic control problem is discretized in such way that a optimal control for the discretized problem is also a near optimal control for the original problem. By applying this result, we derive near optimal controls for the stochastic inventory with deteriorating item

### References

[1] Leo, D., Ohashi, A., and Souza, F. (2017). Stochastic near-optimal controls for path-dependent systems. arXiv preprint arXiv:1707.04976.

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