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A NOTE ON SOME SEQUENTIAL PROBLEMS FOR THE EQUILIBRIUM VALUE OF A VASICEK PROCESS

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Abstract

We apply the Shiryaev's sequential procedures to the Vasicek model. The problems of the sequential testing of two simple hypotheses and of the quickest detection of an abrupt change, both concerning the equilibrium value of the process, are faced. The solutions to these optimal stopping problems coincide with those of the associated free-boundary problems, solved through the principle of the smooth fit.

Keywords and phrases: Bayesian decision rule, disorder problem, free-boundary problem, optimal stopping, principle of smooth fit, sequential testing, Vasicek process.