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EXISTENCE OF OPTIMAL POLICIES IN STOCHASTIC DYNAMIC PROGRAMMING

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Abstract: This paper deals with a general discrete-time stochastic dynamic programming model. Under rather general conditions on the cost functions and the law of motion it is shown that there exists a fully optimal Borel measurable policy, that is, a policy which is optimal for future at every stage and every possible history of the process up to that stage. For the stationary dynamic programming model this implies the existence of a fully optimal stationary policy.

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