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论文与报告

Markov控制过程基于性能势的平均代价最优策略

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摘要
研究了一类离散时间Markov控制过程平均代价性能最优控制决策问题. 应用 Markov性能势的基本性质, 在很一般性的假设条件下, 直接导出了无限时间平均代价模型在紧致行动集上的最优性方程及其解的存在性定理. 提出了求解最优平稳控制策略的迭代算法, 并讨论了这种算法的收敛性问题. 最后通过分析一个实例来说明这种算法的应用.

关键词 Markov控制过程 性能势 平均代价模型 最优平稳策略
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Optimality Strategy of Average Cost Based Performance Potentials for Markov Control Process

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Abstract
This paper deals with the average cost optimization problem for a class of discrete time Markov control processes. Under quite general assumptions, the optimality equation is directly established and the existence theorem of optimal solution is proved for infinite time average cost model in a compact action set by using basic properties of the Markov performance potentials. The iterate algorithm for solving optimal stationary control strategy is suggested and the convergence problem of this algorithm is discussed. Finally, a numerical example is analyzed to illustrate the application of the proposed algorithm.

Key words Markov control process performance potentials average cost model optimal stationary strategy
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