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一类证券组合投资问题的H_∞状态反馈投资策略

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H_∞ Control with State Feedback for a Kind of Portfolio Investment Problem

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摘要 为研究兼顾实际系统离散性和参数时变性的证券组合投资问题,提出了一个衡量风险大小的二次型性能指标,并建立了证券组合投资的离散时变状态空间模型.运用离散时变系统的H_∞控制理论,得到了证券组合投资的H_∞状态反馈投资策略.仿真证明使用该投资策略可使总收益实现其最小的不确定性.

关键词： 证券组合投资 离散时变系统 H_∞状态反馈控制

Abstract： A time-varying discrete systems'state-space model and a cost function in the form of quadratic function were proposed in order to study the portfolio investment problem.This problem was under the considering of the discreteness of practical systems and the time-variation of the parameters.The H_∞ control theory with state feedback for time-varying discrete systems was applied to this new model.And a strategy of H_∞ control with state feedback for portfolio investment was also given.By using it,the purpose of the incensement of total assets according to the expected one could be achieved.

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