

## DYNAMICAL HIERARCHICAL CONTROL FOR LARGE-SCALE SYSTEMS WITH TWO-LAYER STRUCTURE

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### Abstract

This paper is concerned with the dynamical hierarchical control for large-scale systems with two-layer structure and a quadratic cost function. By using the model established in [2], a new optimization problem of hierarchical output feedback control for the system is formulated, and some interesting results are established. In addition, an algorithm for computing the hierarchical control is presented, which not only makes the overall closed-loop system is always asymptotically stable but also guarantees descent of a quadratic cost function during the iterative process of the algorithm. A simple example is given to illustrate the application of the results obtained in this paper.

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