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Hierarchical algorithms are developed for the optimal control of interconnected nonlinear large-scale dynamic systems. The algorithms synthesis is based on decomposition-coordinated optimization technique with criterion adaptation in the two-level solution structure where the coordinated variables are fixed on the top level, while the independent optimization subproblems are solved on the lower one. For getting computational advantages, it is proposed to apply a concurrent scheme of coordinating variables calculation in the two-level solution structure, whereby the bottom-level optimization tasks are also solved concurrently.

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