

Automated synthesis of control configurations for large-scale process networks using graph-theoretic methods

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In this talk, we will discuss the graph-theoretic methods for the automatic synthesis of control configurations for large-scale process networks. Specifically, two such methods will be discussed. The first method addresses the problem of hierarchical control structure design problem whose objective is to identify control objectives and potential manipulated variables for vastly different time scales. Using the second method, one can design distributed control structures, where strongly interacting variables are controlled together by distributed agents. Finally, potential extensions of two methods will be discussed.