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Fully observable networks with polytree structure

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***Abstract*— The talk tackles the problem of reconstructing the tree-like topological structure of a network of linear dynamical systems. A distance function is defined in order to evaluate the "closeness" of two processes and some useful mathematical properties are derived. Theoretical results to guarantee the correctness of the identification procedure for networked linear systems characterized by a tree topology are provided as well. The talk also suggests the approximation of a complex connected network with a tree in order to detect the most meaningful interconnections.**

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