T-13 TIAGO PEREIRA

*_Topological Interlacing on the Stability of Partial Synchronization in Complex Networks_*

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Heterogeneity in the degree distribution is known to suppress global synchronization in complex networks of symmetrically coupled oscillators. This turns out to be a desirable property, since in most realistic networked systems where synchronization is relevant, strong synchronization may also be related to pathological activities. Recent results reveal that partial synchronization can take place in heterogeneous networks: the high degree nodes synchronize while the remaining nodes are out of synchrony. Here we explain the mechanism responsible for the onset of local synchronization. Surprisingly, this high-degree synchronization depends on an intricate interlacing between local and global network properties such as the maximum degree and the number of shortest paths between the hubs.