

Network Systems from a Contraction Theory Viewpoint

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Using examples from neuroscience, we survey recent progress on the application of the Banach contraction principle to dynamical systems over networks. We illustrate how to generalize the basic contraction property from discrete to continuous time, from Euclidean to non-Euclidean norms, from closed to open systems, and, finally, from single agents to networks of systems. We conclude by discussing strengths and weaknesses of our proposed theory.