Summary: This paper concerns with the problem of synchronization of complex dynamical networks (CDNs) with discontinuous coupling signals which are kept constant during the sampling period and are allowed to change only at the sampling instant. Based on the time-dependent Lyapunov functional approach, convex combination technique, and multiple-integral method, a sampling interval-dependent criterion is derived for synchronization of CDNs with discontinuous coupling signals. Numerical examples are given to demonstrate the effectiveness of proposed method and the relation between conservatism of results and triple integral method.

MSC:
93A15  Large-scale systems
93C15  Control/observation systems governed by ordinary differential equations
34D06  Synchronization of solutions to ordinary differential equations
34C60  Qualitative investigation and simulation of ordinary differential equation models
37M05  Simulation of dynamical systems
37N35  Dynamical systems in control

Keywords:
complex dynamical networks; synchronization; sampled-data system; discontinuous coupling

Full Text: DOI

References:
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