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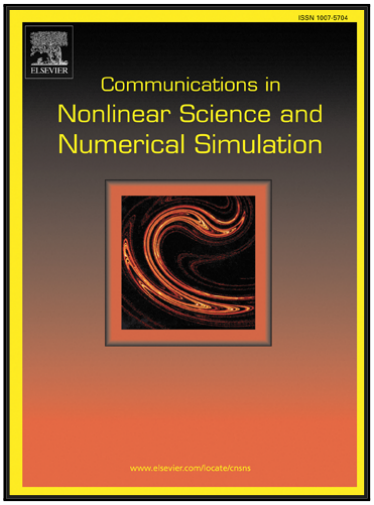

Generalized Exponential Input-to-state Stability of Nonlinear Systems with Time Delay

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PII: S1007-5704(16)30301-X
DOI: 10.1016/j.cnsns.2016.08.016
Reference: CNSNS 3965

To appear in: *Communications in Nonlinear Science and Numerical Simulation*

Received date: 7 September 2015
Revised date: 15 May 2016
Accepted date: 23 August 2016

Please cite this article as: Fenglan Sun, Lingxia Gao, Wei Zhu, Feng Liu, Generalized Exponential Input-to-state Stability of Nonlinear Systems with Time Delay, *Communications in Nonlinear Science and Numerical Simulation* (2016), doi: 10.1016/j.cnsns.2016.08.016

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Highlights

- Provide several concepts of general input-to-state stability for the nonlinear delay systems. That is generalized globally exponential integral input-to-state stability (GGE-iISS), generalized globally integral exponential integral input-to-state stability (GGIE-iISS), and $e^{\lambda t}$ -weighted generalized globally integral exponential integral input-to-state stability ($e^{\lambda t}$ -weighted GGIE-iISS).
- Give out the stability conditions of the general input-to-state stability for the nonlinear delay systems. Moreover, strict theoretical derivation is given to prove the sufficiency and correctness of the given conditions.
- An example is given to illustrate the correctness of the obtained theoretical results.

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