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Global Stability Analysis of an End-to-End Congestion Control Scheme for General Topology Networks with Delay

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**Abstract:** We analyze the stability properties of an end-to-end congestion control scheme under fixed heterogeneous delays, and for general network topologies. The scheme analyzed is based on the congestion control game of [1], with the starting point being the unique Nash equilibrium of that game. We prove global stability of this solution (and hence of the congestion control algorithm) under a mild symmetricity condition. We further demonstrate the stability of the algorithm numerically for various delays, user numbers, and topologies

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