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Dynamic Analysis, Control and Applications of Impulsive Systems

This talk focuses on the dynamic analysis, control and applications of impulsive systems. Specifically, the concept of average impulsive interval will be introduced and, based on this concept, a unified synchronization criterion for impulsive dynamical networks is established. Furthermore, a new concept of average impulsive delay is introduced to characterize impulsive delays from a holistic perspective. In addition, unlike previous results on the "negative" effect of delay on the stability of impulsive systems, this talk will show the potential "positive" effect of delay on the stability of impulsive systems. Finally, impulsive control is successfully applied to stabilization of networked systems under denial-of-service (DoS) attacks. These applications demonstrate that impulsive controllers are very robust to a wide range of DoS attackers, even if their attack parameters (DoS duration and DoS frequency) are previously unknown to the control designer.

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Zu diesem Vortrag laden wir Sie herzlich ein.

gez. Sergey Dashkovskiy