Stability Criteria for Networked Control Systems With Packetized Transmissions

Explicit consideration of the packetized character of transmitted data

- each packet is linked to its corresponding bounded time-varying network delay
- overtaking of packets along multi-hop networks is possible
- different packet skipping and hold mechanisms are present at the receiver side
- a correct simulation of networked control systems with variable time delays is essential

Stability Criteria

- LMI-based stability conditions usually do not include the packetized character
- stability criteria based on the small gain theorem allow to include different packet skipping and hold mechanisms

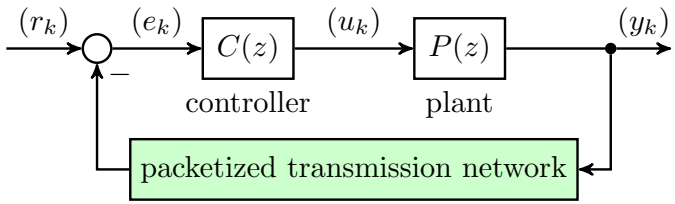

Fig.: feedback loop with delayed measurements that are sent via a network with bounded variable packet delays.

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