
KEXUE ZHANG, University of Calgary

A unified asymptotic stability result for time-delay systems with delayed impulses

In this talk, we present a result of asymptotic stability of time-delay systems with delay-dependent impulses. This unified stability criterion can be applied to a variety of impulsive systems, such as systems with stabilizing continuous dynamics and destabilizing (or stabilizing) impulses, systems with destabilizing continuous evolution and stabilizing impulses, or systems with marginal stable continuous dynamics or marginal stable impulse effects. The unified stability criterion provides the (reverse) average dwell-time conditions on the impulse time sequences, and it is more general than the existing results in the sense that the derived stability guarantee does not require the uniform lower (and/or upper) bound of the impulse intervals. This is joint work with Elena Braverman (Calgary).