

Necessary conditions for the existence of a common quadratic Lyapunov function

Helena Šmigoc, Hamilton Institute, Maynooth, Ireland

(Joint work with Thomas J. Laffey)

The problem of determining conditions for the existence of a common quadratic Lyapunov function (CQLF) for stable switched systems is important in applied and theoretical research. We will introduce the problem and present necessary conditions for the existence of a CQLF. Those conditions are also sufficient in some special cases. We will show that the conditions are not sufficient in general.