Projected dynamical systems for constrained integral control

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Résumé

Recently, a new framework based on projected dynamical systems has been proposed to address constrained integral control for nonlinear systems. Leveraging on projected dynamics, the integrator state is constrained in a closed and convex set to enforce safety constraints and guarantee set-point tracking. Despite recent advances, existing contributions address only the case where the constraint set is static. As a result, the current theoretical foundations do not yet cover the practically relevant scenario where safety constraints evolve over time. The objective of this PhD project is to extend this emerging framework to time-varying constraints.

Mots-Clés: Projected dynamical systems, Integral control, Nonlinear systems

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