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## CICLO DI SEMINARI DI AUTOMATICA E ROBOTICA

 AULA 11  
DIPARTIMENTO DI INGEGNERIA

# HYBRID DYNAMICAL SYSTEMS

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### Relatore

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### Abstract

Hybrid dynamical systems, when broadly understood, encompass dynamical systems where states or dynamics can change continuously as well as instantaneously. Hybrid control systems arise when hybrid control algorithms—algorithms which involve logic, timers, clocks, and other digital devices—are applied to classical dynamical systems or systems that are themselves hybrid. Hybrid control may be used for improved performance and robustness properties compared to classical control, and hybrid dynamics may be unavoidable due to the interplay between digital and analog components of a system. In this talk, I will provide an overview on hybrid dynamical systems with a special focus on stability analysis. In particular, I will show how classical results available for continuous-time and discrete-time systems can be obtained by specializing more general results for hybrid systems. Examples and applications will illustrate the theoretical concepts and hopefully spark new ideas.

Link Teams: <https://bit.ly/3182aqB>