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"On Impulse, Switching and Hybrid Control Models"

Abstract: This is a presentation based on joint works (with H. Jasso-Fuentes, T. Prieto-Rumeau, M. Robin) concerning hybrid control models in discrete and continuous time. As expected, only some raw ideas are sketched and attention to the proper references is not given, since every details can be found in the quotes joint works. Most of the time is used on a general Markov Decision Process, where a discussion on stopping, impulse, switching and hybrid models is briefly given. Later, in a continuous time setting, impulse and switching controls are viewed as particular cases of hybrid control models for Markov-Feller processes. Moreover the constraint so-called 'wait for a signal' is used as a typical example, where most of the desired results are available.