# About Moreau-Yosida regularization of the minimal time crisis problem

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***TITULO***

# *About Moreau-Yosida regularization of the minimal time crisis problem*

***Resumen:***

We study an optimal control problem where the cost functional to be minimized represents the so-called time of crisis, i.e. the time spent by a trajectory solution of a control system outside a given set K. This functional can be expressed using the indicator of K, that is discontinuous preventing the use of the standard Maximum Principle. We consider a regularization scheme of the problem based on the Moreau-Yosida approximation of the characteristic function of K. We prove the convergence of an optimal sequence for the approximated problem to an optimal solution of the original problem. We then investigate the convergence of the adjoint vector given by Pontryagin's Principle when the regularization parameter goes to zero. Finally, we study an example illustrating the convergence property and we compute explicitly an optimal feedback policy and the value function.

Miércoles 06 de mayo a las 16:30 hrs, Sala de Seminarios CMM, John Von Neumann.

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