

B I - C O M A T H E M A T I C S C O L L O Q U I U M

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*“An Introduction to the Mathematics
of Optimal Control Theory”*

Monday, September 19, 2011

Talk at 4:00 – Park 328

Tea at 3:30 – Park 355, Math Lounge

Abstract:

Optimal control problems arise in a wide variety of applications ranging from determining the best route for your morning commute to engineering a better airplane. The mathematical formulation and solution of optimal control problems is made possible by functional derivatives, which are a natural extension of basic calculus. This talk will briefly present the concept of functionals and the technique of functional derivatives, then show how optimal control problems can be formulated by deriving the Euler-Lagrange equations for an objective functional. As a specific example, the mathematical techniques described will be applied to the field of quantum chemistry.

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