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Navin Khaneja* (navin@eecs.harvard.edu), 33 Oxford Street , MD 335, Cambridge, MA
02138. *Convexity, the Weyl group and Time Optimal Control of Spin Systems.*

In this talk, we describe some optimal control problems related to steering dynamical systems evolving on compact Lie groups. These problems arise in manipulation of dynamics of coupled spins in magnetic resonance spectroscopy and quantum computing. We show how solution to these problems draws from the well developed theory of symmetric spaces. (Received August 31, 2008)