

Controllability of the bilinear Schroedinger equation: theory and applications

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In this talk I will present the main ideas we used to prove controllability of the bilinear discrete spectrum Schroedinger equation and I will show how to use our result in specific examples as the harmonic oscillator, the 3D well of potential and the quantum pendulum. The quantum pendulum is particularly interesting since it represents the simplest model for controlling the orientation of a molecule. I will also explain how our results apply to the control of the density matrix.