DEPARTAMENTO DE
ANÁLISIS MATEMÁTICO

Seminario de QI

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"The quantum adiabatic theorem and eigenpath traversal"

Abstract:

We review the situations under which the standard quantum adiabatic condition fails. We reformulate the problem of adiabatic evolution as the problem of Hamiltonian-eigenpath traversal, and give convergence conditions in terms of the length of the eigenpath and the minimum energy gap of the Hamiltonians. We introduce a randomized evolution method that can be used to traverse the eigenpath and prove its convergence and cost. We then describe more efficient methods for the same task and show that their implementation complexity is close to optimal.

Organizado por el Grupo de Investigación de la UCM *Matemáticas e Información Cuántica*, el Departamento de Análisis Matemático de la UCM y el IMI

Fecha:20 de julio de 2009, a las 12.00 horas.

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