

Seminario de análisis matemático y aplicaciones  
Analisi matematikoa eta aplikazioak mintegia

Time decay of scaling critical  
electromagnetic Schrödinger flows

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**ABSTRACT:** Motivated by the study of the dispersive properties of Schrödinger flows, in presence of scaling-critical electromagnetic field, we found a new representation formula for the unitary group in consideration. This involves the spherical component of the Schrödinger operator, whose eigenvalues and eigenfunctions appear explicitly in a suitable series. The uniform boundedness of this series implies immediately the sharp  $L^1 - L^\infty$  time decay for the unitary flow. Hence matters are reduced to the study of the spectral properties of perturbed spherical laplacians. We focus in the talk considering three particular cases: 1) the 3D-inverse square potentia, 2) the 2D-Aharonov-Bohm potentials and 3) general 2D potentials. We also provide hints for general 3D axisymmetric potentials.

**LUGAR / LEKUA:**

Sala de seminarios de la sección de matemáticas  
Matematika ataleko mintegi gela

**DÍA Y HORA / EGUNA ETA ORDUA:**

16/04/2015, 12:00