

MAFIA - seminář, který se neodmítá

Applications of Hardy-type inequalities to some singular PDEs

Cristi Cazacu

Nuclear Physics Institute, Řež

**středa 4.12. 2013 od 13:30 v místnosti
T112**

Fakulta jaderná a fyzikálně inženýrská ČVUT
Trojanova 13, 12000 Praha

Abstract: In this talk we mainly discuss optimal Hardy-type inequalities for Schrödinger operators of the form $A_\lambda := -\Delta - \lambda V$, $\lambda > 0$, where V is a positive potential with quadratic singularities located either in the interior or on the boundary of an open smooth domain $\Omega \subset \mathbb{R}^N$, $N \geq 1$. We discuss the criticality of A_λ in terms Hardy inequalities. In addition, due to the presence of the singular potential V , standard elliptic regularity of the Dirichlet problem associated to A_λ fails. In particular, we emphasize how this impediment affects the controllability aspects of the wave equation with the singular potential $V = 1/|x|^2$.