

Uniform resolvent estimates for a few non-elliptic operators

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We will present recent results on uniform weighted resolvent estimates, or equivalently limiting absorption principles with uniform bounds with respect to the spectral parameter, for two non-elliptic differential operators. One is the massless Klein-Gordon operator on the asymptotically Minkowski spacetime with a sufficiently small metric perturbation and the other is the sub-Laplacian on the Heisenberg group. In both cases, the main technical tool is the method of weakly conjugate operators, which is a variant of Mourre's commutator method, with conjugate operators involving the generator of dilation and some non-local Sobolev weights. This talk is partly based on joint work with Luca Fanelli, Luz Roncal and Nico Michele Schiavone.

Orateur: MIZUTANI, Haruya