Multiplier theorems for Grushin operators (joint work with A. Martini)

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I present a new multiplier theorem of Mihlin-Hörmander type for subelliptic differential operators of the form

$$-\partial_x^2 - V(x)\partial_y^2,$$

where $V(x)$ is a perturbation of the power-law $|x|^d$ $(d > 1)$, and for higher dimensional analogues. This extends previous results confined to the $d = 1$ and $d = 2$ nonperturbed case, due to A. Sikora, A. Martini, and P. Chen.

The methods include precise semiclassical estimates for the eigenfunctions of one-dimensional Schrödinger operators with potentials that are perturbed power-laws.

References

[1] Dall'Ara, G., Martini, A., *A sharp multiplier theorem for a perturbation-invariant class of Grushin operators of arbitrary step*, arXiv:1712.03065.