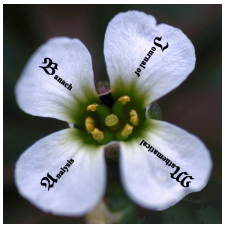

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ON PSEUDODIFFERENTIAL OPERATORS WITH SYMBOLS IN GENERALIZED SHUBIN CLASSES AND AN APPLICATION TO LANDAU-WEYL OPERATORS

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Abstract. The relevance of modulation spaces for deformation quantization, Landau–Weyl quantization and noncommutative quantum mechanics became clear in recent work. We continue this line of research and demonstrate that $Q_s(\mathbb{R}^{2d})$ is a good class of symbols for Landau–Weyl quantization and propose that the modulation spaces $M^p_{v_s}(\mathbb{R}^{2d})$ are natural generalized Shubin classes for the Weyl calculus. This is motivated by the fact that the Shubin class $Q_s(\mathbb{R}^{2d})$ is the modulation space $M^2_{v_s}(\mathbb{R}^{2d})$. The main result gives estimates of the singular values of pseudodifferential operators with symbols in $M^p_{v_s}(\mathbb{R}^{2d})$ for the standard Weyl calculus and for the Landau–Weyl calculus.

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