

SPECTRAL MULTIPLIERS FOR THE KOHN LAPLACIAN ON COMPLEX SPHERES

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ABSTRACT. The Kohn Laplacian \square_b associated to the tangential Cauchy–Riemann complex on a strictly pseudoconvex CR manifold M is a classic example of a non-elliptic, hypoelliptic differential operator. In the case M is the unit sphere in \mathbb{C}^n , a great amount of information about the spectral theory of \square_b can be obtained via representation theory of unitary groups. Following this approach, in joint work with V. Casarino (Padova), M.G. Cowling (Sydney), and A. Sikora (Sydney), we prove a multiplier theorem of Mihlin–Hörmander type for \square_b that improves previously known results. It is still an open question whether the same improvement can be obtained for an arbitrary compact strictly pseudoconvex CR manifold M .

REFERENCES

- [1] V. Casarino, M.G. Cowling, A. Martini, and A. Sikora, *Spectral multipliers for the Kohn Laplacian on forms on the sphere in \mathbb{C}^n* (2015), [arXiv:1501.02321](https://arxiv.org/abs/1501.02321).

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