ON GLOBAL HYPOELLIPTICITY OF $\overline{\partial}_b$ ON COMPACT CR MANIFOLDS

VINÍCIUS NOVELLI

ABSTRACT. In this work, we consider a family of compact CR manifolds, of the form $\Omega = M \times \mathbb{T}^d$, where M is a compact Kähler manifold. The structure depends naturally on d forms ω_j on M, of type $(0,1)$ and $\overline{\partial}$-closed. On the Levi-flat case, we study the problem of global hypoellipticity of the associated differential operator $\overline{\partial}_b$. We are able to characterize this property in terms of global hypoellipticity of a real operator naturally associated to $\overline{\partial}_b$. Time permitting, we shall also discuss questions of solvability and cohomology for these (and related) models. This work is part of the author's PhD thesis, supervised by Paulo Cordaro.

REFERENCES

[1] P. D. Cordaro and V. Novelli. A comparison principle between certain Levi-flat compact CR manifolds and systems of real vector fields. *Disponível em arXiv:2311.00607*, 2023.

[2] V. Novelli. *Regularity and comparison principles in complex analysis and locally integrable structures*. University of São Paulo, 2024. PhD thesis.

UNIVERSITY OF SÕ PAULO
Email address: viniciusnovelli@usp.br