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Nilpotent Holomorphic Foliations: Generalization and Newton Polyhedron Characterization

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Abstract

In this talk, we introduce a generalization of the classical notion of nilpotent holomorphic foliations in \mathbb{C}^2 , extending it to higher dimensions. We focus on the formal classification of a distinguished subfamily by means of the weighted order and the associated Newton polyhedron. Our approach highlights the role of these tools in the study of singularities and the local behavior of foliations in complex analytic geometry. This is a joint work with Evelia García Barroso.

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