SEMINÁRIO DE GEOMETRIA

9 junho | 15h00 | sala C6.2.33

On Principal Value and Standard Extension of Distributions

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Abstract:

For a holomorphic function f on a complex manifold M we explain in this article that the distribution associated to $|f|^{2\alpha}(\mathrm{Log}|f|^2)^q f^{-N}$ by taking the corresponding limit on the sets $\{|f| \geq \varepsilon\}$ when ε goes to 0, coincides for $R(\alpha)$ non negative and $q, N \in \mathbb{N}$, with the value at $\lambda = \alpha$ of the meromorphic extension of the distribution $|f|^{2\lambda}(\mathrm{Log}|f|^2)^q f^{-N}$. This implies that any distribution in the D_M- module generated by such a distribution has the Standard Extension Property. This implies a non torsion result for the D_M -module generated by such a distribution. As an application of this result we determine generators for the conjugate modules of the regular holonomic D-modules associated to $z(\sigma)^\lambda$, the power λ, where λ is any complex number, of the (multivalued) root of the universal equation of degree k, $z^k + \sum_{j=1}^{k}(-1)^h\sigma_h z^{k-h} = 0$ whose structure is studied in [4].

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