SEMINARIO

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Resolution of singularities of the cotangent sheaf of a singular variety

Abstract: The subject of the talk is resolution of singularities of differential forms on an algebraic or analytic variety. We address the problem of finding a resolution of singularities $\sigma : X \to X_0$ of a singular algebraic or analytic variety X_0 such that the pulled back cotangent sheaf of X_0 (i.e., the pull-back of the differential forms defined in X_0) is given, locally in X, by monomial differential forms (with respect to a suitable coordinate system). This problem is related with monomialization of maps, the L^2 cohomology of singular varieties and reduction of singularities of vector-fields. In a work in collaboration with Bierstone, Grandjean and Milman, we give a positive answer to the problem when $dim X_0 \leq 3$.

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