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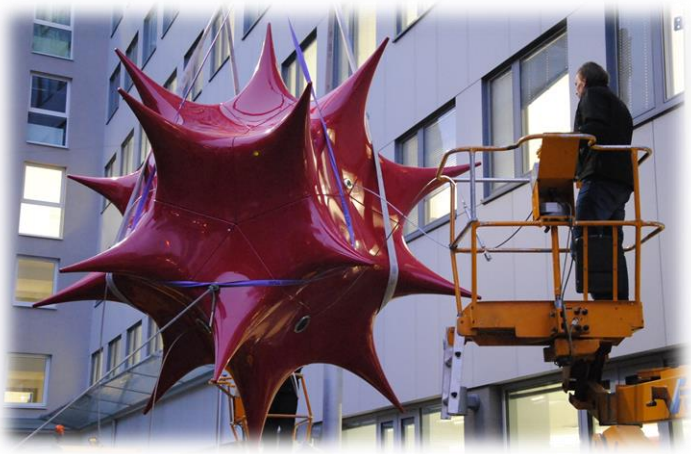
SEMINÁRIO DE GEOMETRIA

Dia 2 de Fevereiro (sexta-feira), às 13h30, sala 6.2.33



Working with singularities

Herwig Hauser

(Fakultät für Mathematik, Universität Wien)

Abstract: Consider an algebraic curve or surface as defined for instance by the equations $x^2 - y^5 = 0$ or $x^2 - y^2 z = 0$ at the origin of affine space. Despite the simplicity of the polynomials, the geometry is more complicated than one would expect: 0 is a "singular" point -- in the sense that the solution sets of the equations are not a manifold at that point but show a more complicated structure. It is a classical and basic challenge of algebraic geometry to understand these singularities since they notoriously appear when trying to solve implicit algebraic equations.

In the talk, which addresses a general audience, we will compare several instances of the geometric features of singularities with the algebraic structure of its equation. In this perspective we will discuss concepts like symmetry, triviality, tangency, curvature, intersection, projection and resolution. The presentation will be complemented by visualizations of various algebraic surfaces and requires no specific knowledge of algebraic geometry.

Seminário financiado por Fundos Nacionais através da FCT – Fundação para a Ciência e a Tecnologia no âmbito do projeto UID/MAT/04561/2013

Local: FCUL - Edf. C6 - Piso 2, 6.2.33