SEMINARIO DE GEOMETRÍA ALGEBRAICA

Jueves 1 de julio de 2010, **13:00**, Seminario 238

Alexander Esterov

Universidad de Moscú

Impartirá la conferencia

Newton polytopes of discriminants of complete intersections.

Resumen.

Newton polytope generalizes the notion of degree of a multivariate polynomial. Newton polytopes of discriminants and resultants have been extensively studied in the last two decades by many authors (I. Gelfand, M. Kapranov, A. Zelevinsky, J. McDonald, P. González Pérez, B. Sturmfels, E. Cattani etc.) in various settings for various reasons. All the subjects of their study can be considered as special cases of the following one: we restrict the standard projection $\mathbb{C}^n \to \mathbb{C}^m$ onto a complete intersection, whose equations are polynomials on \mathbb{C}^n with given Newton polytopes and generic coefficients, and we study the Newton polytope of the discriminant of this restriction. Attempts to extend known results to this general setting lead to a number of open questions and conjectures. For instance, the discriminant is conjecturally always a hypersurface in this setting (and, in particular, its Newton polytope is well defined) if we define it wisely; Newton polytopes of such discriminants conjecturally enjoy nice additivity properties, which helps to compute them. We are planning to overview and illustrate a number of results and questions of this kind.