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# SEMINÁRIO DE GEOMETRIA

Dia 7 Dez (sexta-feira), às 13h30, sala 6.2.33

## Quotients in Algebraic Geometry, Quiver Representations and Character Varieties

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**Abstract:** Generalizing the classical theory of algebraic invariants, David Mumford introduced Geometric Invariant Theory in order to endow natural quotients and moduli spaces with algebro-geometric structure. It turned out that quotients in algebraic geometry are intimately related to quotients in symplectic geometry, through the famous Kempf-Ness theorem.

In this seminar, we consider this relationship and study the corresponding quotients in terms of their geometry, topology and singularities, for some classes of examples: moduli spaces of vector bundles over Riemann surfaces, moduli spaces of quiver representations, and character varieties. When these moduli spaces are algebraic varieties defined over the integers (e.g, the cases of quivers and of character varieties) one can additionally consider their arithmetic structure, which happens to be connected problems) on GL<sub>n</sub>-character varieties of free and of free abelian groups, which is joint work with A. Nozad, J. Silva and A. Zamora.

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

