

GEOMETRY & PHYSICS SEMINAR

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Metamorphosis of a Combinatorial Curiosity

Mahir Bilen Can (Tulane Univ, USA)

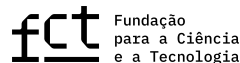
Abstract:

Combinatorially motivated curiosities can sometimes lead to a deeper understanding of specific families of objects in algebraic geometry and representation theory. Indeed, examples of this phenomenon abound in the literature, including the fragrant theory of symmetric polynomials, which directly relates to the geometry of various highly symmetric varieties, such as Grassmannians and Hilbert schemes.

Along these lines, we will motivate our talk using the curious case of the nearly toric Schubert varieties, which essentially emerged from our effort to answer the following question: Which orbit closure of a Borel subgroup in a spherical variety is itself spherical? This is a challenging problem in general. Nevertheless, as we will show, the question possesses an interesting solution for Schubert varieties, guiding us to new conjectures and inspiring hopes of discovering fresh organizational principles in algebraic group actions. Parts of this talk are based on our collaborative works with Nestor Diaz, Senthamari Kannan, and Pinaki Saha.



Grupo de
Física Matemática
da Universidade de Lisboa



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