

Joint Seminar

***Optimization Graph Theory and
Combinatorics Group
Group of Algebra and Geometry***

**Newton's problem of minimal resistance
for convex bodies: the state of art**

Alexander Plakhov, CIDMA, University of Aveiro

December 4, 2019, 14h00 – 15h00, Room Sousa Pinto

This problem was stated and solved by Newton for axially symmetric bodies. It is now generally considered to be a starting point for creation of the calculus of variations. The new life to the problem was given in the seminal paper by Buttazzo and Kawohl in 1993. We will give a review of new results and approaches that have been developed since then. In particular, we will prove a conjecture stated in 1995: the slope of the surface of an optimal body equals 1 at its front part. The proof is based on the notion of surface area measure of convex bodies introduced by Minkowski.

This seminar is supported in part by the Portuguese Foundation for Science and Technology (FCT – Fundação para a Ciência e a Tecnologia), through CIDMA – Centro de Investigação e Desenvolvimento em Matemática e Aplicações, within project **UID/MAT/04106/2019**.