

Seminar AGCO

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Where: Av República 701, Sala 33.

When: Wednesday, Agosto 14, 14:30.

Title: Complexity of point-to-planar convex set distance

Abstract:

In computer science, there are several equivalent ways to define a computable compact set in $\mathbb{R}^k$. One of them is the so called “locally computable compact set”, that is, being able to decide whether or not a given ball intersects the set – this is often referred to as the “pixel information” of the set because, loosely speaking, it allows us to know which pixels must be coloured when drawing a picture of the set on a screen. It is not hard to see that from the pixel information of a set one can compute the distance to a given point, but the computational cost of doing so may be very different for different sets.

In this talk we discuss the computational complexity of point-to-set distance restricted to planar convex bounded sets using a geometrical approach. In particular we will show that in this case there is an algorithm to compute this distance in polynomial time.

This is a joint work with M. Hoyrup.