Monotone sets in Carnot groups: an interesting class of "convex" sets

Daniele Morbidelli
Università di Bologna
daniele.morbidelli@unibo.it

In this talk we discuss some properties of horizontal convexity in Carnot groups. Namely, in the setting of a step-2 Carnot group G of rank at most 3, we show a classification of all sets $E \subset G$ which are horizontally convex and whose complement is convex too. Horizontal convexity is relevant in the theory of second-order subelliptic pde and the monotonicity notion we discuss here plays also a role in bilipschitz embeddability properties for subRiemannian spaces. This is a joint paper with Séverine Rigot, from Nice.