

# REGULARITY OF ISOMETRIES OF SUB-RIEMANNIAN MANIFOLDS

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We consider manifolds equipped with Carnot-Caratheodory distances and discuss some methods to show smoothness of their isometries (i.e., their distance-preserving homeomorphisms). The arguments come from analysis on metric spaces, PDE, and the theory of locally compact groups. It will be important to consider the metric tangent spaces of subRiemannian manifolds, which are Carnot groups. We explain why isometries between Carnot groups are affine maps and also the fact that subRiemannian isometries, likewise the Riemannian ones, are uniquely determined by the horizontal differential at a point. The work is in collaboration with L. Capogna and A. Ottazzi.