Valentino Magnani, University of Pisa, It

Title: Obstacle-type problems for the sub-Laplacian

ABSTRACT. We present the obstacle problem in the classical setting and for left invariant Hörmander vector fields.Then we focus our attention on a no-sign obstacle-type problem in stratified groups. We establish the sharp regularity for solutions to this problem in terms of the control distance induced by the vector fields. The main ideas are based on BMO estimates, a relation between the size of the averaged Hessian and the coincidence set, and by Caffarelli's method of approximation by harmonic polynomials. These results have been obtained in collaboration with Andreas Minne (KTH Royal Institute of Technology).