



DIISM – Dipartimento di Ingegneria
Industriale e Scienze Matematiche

AVVISO DI SEMINARIO

Mercoledì 3 maggio 2023 - ore 10.30

presso l'aula 155/B nei locali DIISM

il **Dott. MIRCO PICCININI** dell'Università degli Studi di
Parma terrà un seminario dal titolo “Nonlinear fractional
equations in the Heisenberg group”

Abstract: In the subRiemannian setting of the Heisenberg group we state some classical regularity properties of weak solutions to the Dirichlet problem related to a wide class of integro-differential operators, whose prototype is the conformally invariant fractional subLaplacian; see Branson, Fontana and Morpungo, *Ann. of Math.* 2013. We show that weak solutions belong to the intrinsic fractional Hölder space, extending the classical results by De Giorgi-Nash-Moser to the nonlocal framework in the Heisenberg group. Moreover, we state some Harnack-type inequalities which are the analog in the Heisenberg setting of the results proven by Di Castro, Kuusi and Palatucci (*J. Funct. Anal.* 2014) and in turn we generalize them to the non-homogeneous case. In the linear case when $p = 2$ the robustness of these inequalities is investigated as the differentiability exponent s goes to 1.