RECENT DEVELOPMENTS IN NONLOCAL PDE'S AND SYSTEMS

In this talk we will give a brief overview of nonlocal operators and introduce a notion of nonlocal gradient, which appears naturally from problems arising in geometric analysis. We will present a variety of results involving this operator: regularity for parabolic systems with critical growth in the nonlocal gradient, a comparison principle for viscosity solutions of $s < 1$ order Hamilton-Jacobi equations and a nonlocal version of the inverse problem of Donsker-Varadhan.