

# Regularity theory for fully nonlinear nonlocal equations with nonhomogeneous degeneracy

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In this talk, we will discuss regularity estimates for a class of degenerate/singular fully nonlinear nonlocal equations. In the degenerate scenario, we establish that there exists at least one viscosity solution of class  $C_{loc}^{1,\alpha}$ , for some constant  $\alpha \in (0, 1)$ . In addition, under suitable conditions on the degree of the operator  $\sigma$ , we prove regularity estimates in Hölder spaces for any viscosity solution. We also examine the singular setting and prove Hölder regularity estimates for the gradient of the solutions. This is joint work with Makson Santos and Disson dos Prazeres.