

# Séminaire de mathématiques et leurs applications

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**Titre:** On the rate of convergence for monotone numerical schemes for nonlocal Isaacs equations.

**Résumé:** We study monotone numerical schemes for nonlocal Isaacs equations, the dynamic programming equations of stochastic differential games with jump-diffusion state processes. These equations are fully-nonlinear non-convex equations of order less than 2. In our case they are also allowed to be degenerate and have non-smooth solutions. The main contribution is a series of new a priori error estimates: The first results for nonlocal Isaacs equations, the first general results for degenerate non-convex equations of order greater than 1, and the first results in the viscosity solution setting giving the precise dependence on the fractional order of the equation. We also observe a new phenomena, that the rates differ when the nonlocal diffusion coefficient depend on  $x$  and  $t$ , only on  $x$ , or on neither.