

Quantitative De Giorgi Methods in Kinetic Theory

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Abstract : We consider hypoelliptic equations of kinetic Fokker-Planck type, also sometimes called of Kolmogorov or Langevin type, with rough coefficients in the drift-diffusion operator in velocity. We present novel short quantitative proofs of the De Giorgi intermediate-value Lemma as well as weak Harnack and Harnack inequalities (which imply Hölder continuity with quantitative estimates). This is a joint work with Jessica Guerand.