

Title: Sobolev estimates for degenerate Kolmogorov equations

Abstract: I will present some recent results about degenerate (ultra-parabolic) Kolmogorov equations (also known as linear kinetic Fokker–Planck equations), under the condition that the leading coefficients are measurable in t and VMO in (x, v) with respect to the intrinsic quasi-metric. Such equations appear often in kinetic theory. We consider equations in both divergence and non-divergence form and our proof does not rely on any kernel estimates. This is based on joint work with Timur Yastrzhembskiy (Brown University).