

Strong Averaging Along Foliated Lévy Diffusions with Heavy Tails on Compact Leaves

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This work shows a strong averaging principle for diffusions driven by discontinuous heavytailed Lévy noise, which are invariant on the compact horizontal leaves of a foliated manifold subject to small transversal random perturbations. We extend a result for such diffusions with exponential moments and bounded, deterministic perturbations to diffusions with polynomial moments of order $p \geq 2$, perturbed by deterministic and stochastic integrals with unbounded coefficients and polynomial moments. The main argument relies on a result of the dynamical system for each individual jump increments of the corresponding canonical Marcus equation.

References

- [1] M. HÖGELE, P.H. DA COSTA, *Strong Averaging Along Foliated Lévy Diffusions with Heavy Tails on Compact Leaves*, Potential Anal. (2017), 1 - 35