

NONLINEAR LÉVY PROCESSES AND THEIR CHARACTERISTICS

A. NEUFELD

ABSTRACT. We develop a general construction for nonlinear Lévy processes with given characteristics. More precisely, given a set Θ of Lévy triplets, we construct a sublinear expectation on Skorohod space under which the canonical process has stationary independent increments and a nonlinear generator corresponding to the supremum of all generators of classical Lévy processes with triplets in Θ . The nonlinear Lévy process yields a tractable model for Knightian uncertainty about the distribution of jumps for which expectations of Markovian functionals can be calculated by means of a partial integro-differential equation. The talk is based on joint work with Marcel Nutz.