A one-sided symbol for Itô-Lévy processes

Abstract:
A one-sided symbol of a one-sided bounded Itô-Lévy process is introduced and possible ways for its computation as well as its relation to the infinitesimal generator of the process are provided. Further, an integral criterion for invariant distributions of the underlying process is derived which relies on the one-sided symbol. Several applications in settings of one-sided bounded as well as unbounded processes illustrate the advantages of the new criterion in comparison to previous methods.

Stichworte:
Feller process, Invariant measure, Itô-Lévy process, Lévy-type process, Stationarity, Stochastic differential equation, Symbol, Laplace transform