

# Functional central limit theorem for heavy tailed stationary infinitely divisible processes generated by conservative flows

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## Abstract

We establish a new class of functional central limit theorems for partial sum of certain symmetric stationary infinitely divisible processes with regularly varying Lévy measures. The limit process is a new class of symmetric stable self-similar processes with stationary increments, that coincides, on a part of its parameter space, with a previously described process. The normalizing sequence and the limiting process are determined by the ergodic theoretical properties of the flow underlying the integral representation of the process. These properties can be interpreted as determining how long the memory of the stationary infinitely divisible process is. We also establish functional convergence, in a strong distributional sense, for conservative pointwise dual ergodic maps preserving an infinite measure.

This is joint work with G. Samorodnitsky.