

# Zbigniew Palmowski

## Yaglom limit for stable processes in cones

We give the asymptotics of the tail of the distribution of the first exit time of the isotropic  $\alpha$ -stable Lévy process from the Lipschitz cone. We obtain the Yaglom limit for the killed stable process in the cone. We construct and estimate entrance laws for the process from the vertex into the cone. For the symmetric Cauchy process and the positive half-line we give a spectral representation of the Yaglom limit. Our approach relies on the scalings of the stable process and the cone, which allow us to express the temporal asymptotics of the distribution of the process at infinity by means of the spatial asymptotics of harmonic functions of the process at the vertex; on the representation of the probability of survival of the process in the cone as a Green potential; and on the approximate factorization of the heat kernel of the cone, which secures compactness and yields a limiting (Yaglom) measure by means of Prokhorov's theorem.

This is a joint work with Krzysztof Bogdan (Wrocław University of Science and Technology) and Longmin Wang (Nankai University).