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CONVERGENCE THEOREMS FOR SEMI-SELFSIMILAR PROCESSES INDUCED BY RANDOM MOTIONS IN RANDOM ENVIRONMENTS

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Abstract. We investigated convergence theorems of semi-selfsimilar processes to selfsimilar ones, which are described by stochastic integrals with respect to semi-stable and stable Lévy processes. Typical processes expressed to be such forms are a scaled limit of random walk in random scenery studied by Kesten and Spizter and that of birth and death process in random environment studied by Kawazu and Kesten. We show that their selfsimilar limit processes are provided by semi-selfsimilar processes.

Keywords. semi-selfsimilar process, selfsimilar process, birth and death process in random environment, random walk in random scenery, local time.

AMS (MOS) subject classification: 60G18, 60K37, 60G50, 60J60.

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