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On a method of the Lévy-type processes construction

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The construction of a Lévy-type processes as a solutions to an SDEs is a classical problem which comes back to the works of Skorokhod in 1960s. His method was based on the representation of any Lévy measure as an image under some transform of a fixed measure. Our method is based on the same idea but due to the choice of reference measure leads to transparent set of conditions for the uniqueness and existence of the strong solution to a correspondent SDE. This method appeared to be applicable in the case where the Lévy kernel can be represented as a sum of the kernels of proper form and kernels of bounded intensity. As examples we construct χ^2-type process, Gamma-type process and α-stable like process as a strong solutions to an SDEs.

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