SOME REMARKS ON $S\alpha S$, β-SUBSTABLE RANDOM VECTORS

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Abstract: An $S\alpha S$ random vector X is *β-substable*, $\alpha < \beta \leq 2$, if $X \stackrel{d}{=} Y\Theta^{1/\beta}$ for some symmetric β-stable random vector Y, $\Theta \geq 0$ a random variable with the Laplace transform $\exp\{-t^{\alpha/\beta}\}$, Y and Θ are independent. We say that an $S\alpha S$ random vector is *maximal* if it is not β-substable for any $\beta > \alpha$.

In the paper we show that the canonical spectral measure for every $S\alpha S$, β-substable random vector X, $\beta > \alpha$, is equivalent to the Lebesgue measure on S_{n-1}. We show also that every such vector admits the representation $X = Y + Z$, where Y is an $S\alpha S$ sub-Gaussian random vector, Z is a maximal $S\alpha S$ random vector, Y and Z are independent. The last representation is not unique.

2000 AMS Mathematics Subject Classification: 60A99, 60E07, 60E10, 60E99.

Key words and phrases: Symmetric α-stable vector, substable distributions, spectral measure.

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