ON THE MOMENT THEOREM OF MEERSCHAERT

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Abstract: Let q be a full operator-stable measure on R^N, and B an exponent of q. Write $m = \min\{\mathrm{Re}x\}$ and $M = \max\{\mathrm{Re}x\}$, where x ranges over the eigenvalues of B. Suppose that the distribution of a random vector X belongs to the domain of attraction of q, $m \neq \frac{1}{2}$ and $\Theta \in R^N - \{0\}$. The object of this note is to show that some results of Hudson et al. [2] can be proved in a simpler way (and somewhat extended) by using the method presented in Meerschaert [4]. Namely, we prove that $E|\langle X, \Theta \rangle|^\alpha$ is finite for $\alpha \in (0, 1/M)$, and infinite for $\alpha > 1/m$. Basing ourselves on this, we can easily obtain a moment theorem which is near the result of Meerschaert [5].

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