

CONTINUOUS CONVOLUTION HEMIGROUPS
INTEGRATING A SUBMULTIPLICATIVE FUNCTION

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Abstract: Unifying and generalizing previous investigations for vector spaces and for locally compact groups, E. Siebert obtained the following remarkable result: A Lévy process on a completely metrizable topological group \mathbb{G} , resp. a continuous convolution semigroup $(\mu_t)_{t \geq 0}$ of probabilities, satisfies a moment condition $\int f d\mu_t < \infty$ for some submultiplicative function $f > 0$ if and only if the jump measure of the process, resp. the Lévy measure η of the continuous convolution semigroup, satisfies $\int_{\mathbb{G} \setminus U} f d\eta < \infty$ for some neighbourhood U of the unit e . Here we generalize this result to additive processes, resp. convolution hemigroups $(\mu_{s,t})_{s \leq t}$, on (second countable) locally compact groups.

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