

ON RELATIONS BETWEEN URBANIK AND MEHLER SEMIGROUPS

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Abstract: It is shown that operator-selfdecomposable measures or, more precisely, their Urbanik decomposability semigroups induce generalized Mehler semigroups of bounded linear operators. Moreover, those semigroups can be represented as random integrals of operator valued functions with respect to stochastic Lévy processes. Our Banach space setting is in contrast with the Hilbert spaces on which so far and most often the generalized Mehler semigroups were studied. Furthermore, we give new proofs of the random integral representation.

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Keywords and phrases: Banach space; one-parameter strongly continuous semigroup; Urbanik decomposability semigroup; measure valued cocycle; generalized Mehler semigroup; Lévy process; random integral.

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