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NEGATIVE DEFINITE FUNCTIONS AND CONVOLUTION SEMIGROUPS OF PROBABILITY MEASURES ON A COMMUTATIVE HYPERGROUP

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Abstract: Corresponding to the definitions of positive definite functions there are various approaches to defining negative definite functions on hypergroups. These range from the obvious "pointwise" definition to axiomatization via the Schoenberg duality. Researchers in this area have used definitions best suited to their immediate purposes. In this paper we present a comprehensive treatment of negative definite functions on commutative hypergroups, leading to convolution semigroups of probability measures and their Lévy-Khintchine representation within the framework of commutative hypergroups on subsets of Euclidean space.

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