

ABSTRACT

On the structure of strongly continuous one-parameter groups of multilinear functionals

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Our main results are structure theorems for strongly continuous one-parameter groups formed by surjective linear isometries of the space of bounded N -linear functionals over smoothly normed complex Banach spaces, in particular over Hilbert spaces. Though the Hilbert case with $N = 1$ factor is a natural analogue to Stone's classical theorem, some crucial arguments of the proof go back to probability theory. As a consequence, we classify the strongly continuous one-parameter automorphism groups of all infinite-dimensional Cartan factors of Jordan theory. We reduce the investigation of the strongly continuous one-parameter groups by non-linear holomorphic automorphism of the unit ball in $\mathcal{L}(H, K)$ to the study of some retarded ordinary differential equations.