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On strongly continuous semigroups of holomorphic Carathéodory isometries

Abstract

We revise and extend Vesentini's descriptions for the strongly continuous one-parameter semigroups by holomorphic Carathéodory isometries of the unit ball in infinite dimensional reflexive complex Cartan factors. We establish closed formulas in terms of Möbius charts and spectral resolutions of skew self-adjoint dilations related to the Reich-Shoikhet non-linear infinitesimal generator. Our treatment is based on intensive use of joint boundary fixed points along with Kaup type ideas with partial vector fields of second degree and J^* -algebraic operator representations. We also provide results based on the Carathéodory metrics toward a Hille-Yosida type theory for holomorphic self-maps of bounded domains in Banach spaces.