

Nonlinear resolvents for semigroups on the upper half-plane

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Abstract

Nonlinear resolvents are known to exist for infinitesimal generators of semigroups of holomorphic self-maps of a bounded convex domain (even in higher dimensions). However, the case of unbounded domains is less known. In this talk, we examine the case when the domain is the upper half-plane. Indeed, in this case, there are infinitesimal generators which do not admit nonlinear resolvents for all the time $t \geq 0$. On the other hand, for a generic choice of infinitesimal generators, the nonlinear resolvents exist for $t \geq 0$. The present talk is based on joint work with Ikkei Hotta and Sebastian Schleissinger.