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(3rd edition)
Geometric Function Theory in Several Complex Variables and Complex Banach Spaces

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Existence of nonlinear resolvents for unbounded convex domains

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Abstract

Let $(F_t)_{0\le t<+\infty}$ be a semigroup of holomorphic self-maps of a convex domain D in the complex plane (or, more generally, in $\mathbb{C}^n$). We denote by G the infinitesimal generator of F_t, namely, $G(z) = \lim_{t\to 0}(F_t(z) - z)/t$. The nonlinear resolvent $z = J_t(w)$ is defined as the solution to the equation $w = z - tG(z)$ in D. In this talk, we give basic results on the nonlinear resolvents on bounded convex domains. Then, we will discuss on the case of unbounded convex domains. The present talk will be based on the first part of the joint paper with I. Hotta and S. Schleissinger.