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Pointwise convergent nets of holomorphic automorphisms of the unit ball of Cartan factors.
(English summary)

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Symmetric domains in complex Banach spaces E are infinite-dimensional versions of the open unit disk. Of particular importance are the Cartan factors, for example the operator-norm unit ball of bounded linear operators between Hilbert spaces H and K . For these domains D , the authors consider pointwise convergent sequences (or nets) (h_i) of holomorphic automorphisms of D such that $h_i(0)$ stays away from the boundary. For the unit disk, a classical result of H. Cartan states that $h := \lim h_i$ is a holomorphic automorphism as well, and that the convergence is locally uniform. In the infinite-dimensional setting, these conclusions do not hold, as easy counterexamples with linear isometries h_i show. However, by studying the behaviour of $h_i^{-1}(e)$ for every (triple product) atom $e \in E$, the authors derive a sufficient condition for generalizing Cartan's theorem to the case of Cartan factors of type I–IV.

Reviewed by *Harald Upmeyer*

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