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★**Holomorphic automorphism groups in Banach spaces: an elementary introduction.**

North-Holland Mathematics Studies, 105.
Notas de Matemática [Mathematical Notes], 97.
North-Holland Publishing Co., Amsterdam, 1985. xii+291 *pp*. $44.50. *ISBN* 0-444-87657-X

The aim of this book is to give a self-contained introduction to the theory of biholomorphic automorphism groups $G = \mathrm{Aut}(D)$ associated with bounded domains D in complex Banach spaces. Of particular interest is the case where D is a bounded symmetric domain or, more generally, the open unit ball of a complex Banach space.

As shown by J. P. Vigué [Ann. Sci. École Norm. Sup. (4) **9** (1976), no. 2, 203–281; MR0430335 (55 #3340)] and the reviewer [Math. Ann. **223** (1976), no. 3, 279–288; MR0414945 (54 #3037)], G can be endowed with the structure of a real Banach Lie group, acting analytically on D, whose Lie algebra can be identified with the set of all completely integrable holomorphic vector fields on D.

W. Kaup [Math. Ann. **228** (1977), no. 1, 39–64; MR **56** #12342; Math. Z. **183** (1983), 503–529; MR0710768 (85c:46040)] and Vigué [op. cit.] have used this result to determine the holomorphic, geometric and algebraic structure of bounded symmetric domains: Every such domain D is homogeneous (under G) and can be realized as a circular convex domain. Further, the corresponding Banach space carries a Jordan algebraic structure (JB^*-triple) and the norm describing D is the spectral norm given by the Jordan triple product. In this way, one obtains a one-to-one correspondence between (circular) bounded symmetric domains and JB^*-triples. The authors present this theory in detail; for a more general approach (involving symmetric Banach manifolds), cf. the reviewer's book [*Symmetric Banach manifolds and Jordan C^*-algebras*, North-Holland, Amsterdam, 1985].

The book contains also the explicit description of G for the open unit ball D of some "classical" Banach spaces, e.g., for L^p-spaces $(p \neq 2)$ and Jordan triple systems of Hilbert space operators (J^*-algebras).

Reviewed by *Harald Upmeier*