MR640783 (83b:32027) 32M05 (47H10)

Stachó, L. L.

On fixed points of holomorphic automorphisms.

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Let $\mathrm{Aut}(B)$ denote the group of all biholomorphic automorphisms of the open unit ball B of a complex Banach space E. W. Kaup and the reviewer [Proc. Amer. Math. Soc. **58** (1976), 129–133; MR0422704 (54 #10690)] have shown that each $F \in \mathrm{Aut}(B)$ has a unique extension to a homeomorphism $\overline{F}$ of the closure $\overline{B}$. If E is separable and reflexive, then $e^{it}\overline{F}$ has a fixed point in $\overline{B}$ for almost all $t \in \mathbf{R}$, as shown by T. L. Hayden and T. J. Suffridge [ibid. **60** (1976), 95–105 (1977); MR0417869 (54 #5917)]. The author studies the existence of fixed points for Banach spaces $E = \mathcal{C}(S)$ of continuous functions on a compact space S. He shows that S is an F-space (every finitely generated ideal in the ring $\mathcal{C}_{\mathbf{R}}(S)$ is principal) if and only if for a certain class of automorphisms F of B, $\overline{F}$ has a fixed point. Further, a hyper-Stonian space S is the Stone-Čech compactification of its isolated points if and only if $\overline{F}$ has a fixed point for all $F \in \mathrm{Aut}(B)$.

Reviewed by *Harald Upmeier*