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Stachó, László L. (H-SZEG-B)
On the structure of inner derivations in partial Jordan-triple algebras. (English summary)
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For every bounded domain B in a complex Banach space E which is circular (i.e., invariant under rotations $z \mapsto e^{it}z$) there exists a unique maximal closed subspace E_0 of E such that $B \cap E_0$ is a symmetric domain, i.e. homogeneous under holomorphic automorphisms. Generalizing the well-known Jordan-theoretic description of bounded symmetric domains one can define on the pair (E, E_0) an algebraic structure called a partial Jordan triple product which is useful in the geometric study of the original domain B. Since symmetric domains such as $B \cap E_0$ are quite well understood it is of interest to relate the holomorphic (or linear) automorphisms and derivations of $B \cap E_0$ and B, respectively. In this paper a nontrivial result of this kind is proved: Every "inner" derivation of the Jordan triple system E_0 is the restriction of a unique inner derivation of E, provided E_0 is a finite-dimensional Cartan factor or, more generally, a "compact" JB*-triple. For more general Jordan triples, a similar result is proved using the notion of "quasi-grids".

Reviewed by *Harald Upmeier*