Title: Local characterization of Jordan *-derivations on $\mathcal{B}(H)$

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Let H be an infinite-dimensional real Hilbert space, and $\mathcal{B}(H)$ the algebra of all bounded linear operators on H. Assume that $\delta : \mathcal{B}(H) \to \mathcal{B}(H)$ is a real linear map and $P \in \mathcal{B}(H)$ is zero, or the unit element, or a nontrivial idempotent with infinite-dimensional range and infinite-dimensional kernel. It is shown that δ satisfies $\delta(A^2) = \delta(A)A^* + A\delta(A)$ for all $A \in \mathcal{B}(H)$ with $A^2 = P$ if and only if δ is an inner Jordan *-derivation. An example is also given to illustrate that this is not necessarily true when H is finite-dimensional.

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