MR1273340 (95f:46094) 46K70 (46L70)
Kaup, Wilhelm (D-TBNG-MI); **Stachó, László** (H-SZEG-B)
Weakly continuous JB^***-triples.**
Math. Nachr. **166** (1994), 305–315.

Let E be a JB^*-triple; for details see a paper by Kaup [Math. Z. **183** (1983), no. 4, 503–529; MR0710768 (85c:46040)]. JB^*-triples are natural generalizations of JB^*-algebras (a Jordan version of C^*-algebras) and are characterized by a certain ternary product $(x,y,z)\mapsto\{xyz\}$ on E. For instance, if E is a C^*-algebra this ternary product is given by $\{xyz\}=(xy^*z+zy^*x)/2$. Denote by $\mathbf{Cont}_{\mathrm{w}}(E)$ the space of all $a\in E$ such that the squaring map $z\mapsto\{zaz\}$ is weakly continuous. The main results of this paper are the following theorems.

Theorem: Let E be a commutative JB^*-triple and $\pi\colon S\to\Omega$ the corresponding principal $\mathbf{T}$-fibre bundle realization of E as $E=\{f\in\mathcal{C}_0(S)\colon\ f(ts)=tf(s),\ \text{for all } t\in\mathbf{T}\}$. Then $\mathbf{Cont}_{\mathrm{w}}(E)=\{f\in E\colon\ f|\pi^{-1}(\Pi)=0\}$ holds with Π the maximal perfect subset of the spectrum Ω of E.

Theorem: A JB^*-triple is weakly continuous $(E=\mathbf{Cont}_{\mathrm{w}}(E))$ if and only if the following three conditions are satisfied: (1) E has the dual RNP (i.e. the dual of E has Radon-Nikodým property); (2) every w^*-dense representation from E to a Cartan factor is elementary; (3) every spin factor representation of E is finite-dimensional.

Reviewed by *Josuke Hakeda*