MR1055610 (91e:17032) 17D92
Odoni, R. W. K. (4-EXTR); **Stratton, A. E.** (4-EXTR)
Structure of Bernstein algebras.
Algèbres génétiques (*Montpellier*, 1985), 117–125, *Cahiers Math. Montpellier*, 38, *Univ. Sci. Tech. Languedoc*, *Montpellier*, 1989.

Bernstein algebras are commutative, nonassociative algebras A with an identity $(x^2)^2 = (\omega(x))^2x^2$, where $\omega\colon A \to R$ is a surjective R-algebra morphism. If $K = \mathrm{Ker}(\omega)$ and e is an idempotent in A, introduce the map $\pi\colon K \to K$ by $\pi(x) = 2ex$. The results in this paper are in various ways based on the decomposition $K = U \oplus V$, where $U = \pi(K)$ and $V = \mathrm{Ker}(\pi)$. They mostly deal with nuclear Bernstein algebras for which $A^2 = A$. A typical result is that any ideal I in such algebras A may be decomposed in a similar way with $I = U' \oplus V'$, where $U' \subseteq U$ and $V' \subseteq V$. Such a decomposition is studied in particular for the annihilator $\mathrm{ann}(K)$ of K, and it is shown that the quotient algebra $A/\mathrm{ann}(K)$ is a nuclear Bernstein algebra with an identity $x^3 = \omega(x)x^2$. Any Bernstein algebra with this identity is called reduced Bernstein, and it is shown that all such algebras are Jordan. This property is then utilized for obtaining further results on general nuclear Bernstein algebras by studying $A/\mathrm{ann}(K)$.

{For the entire collection see MR1055600 (90m:17045)}

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