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Bernstein algebras whose lattice of ideals is distributive.
Nonassociative algebra and its applications (*São Paulo*, 1998), 357–364, *Lecture Notes in Pure and Appl. Math.*, 211, *Dekker*, *New York*, 2000.

In this paper the authors characterize Bernstein algebras whose lattice of ideals is distributive. Firstly, cases of normal, exclusive and Jordan-Bernstein algebras are considered.

If $B = Ke + U_e + Z_e$ denotes a Bernstein algebra, the results obtained in the three mentioned cases are: (1) If B is normal (that is, $U_eZ_e = Z_e^2 = 0$) and its lattice of ideals is distributive, then either B is trivial or $B = Ke + Ku + Kz$ with $u^2 = z$. (2) If B is exclusive (that is, $U_e^2 = 0$), then: (i) If B is a nontrivial algebra and $U_eZ_e = 0$, then the lattice of ideals is distributive if and only if $B = Ke + Ku + Kz$ with $z^2 = u$. (ii) If $U_eZ_e \neq 0$, then the lattice of ideals of B is distributive if and only if U_e is a cyclic φ-module, where $\varphi = R_z|_{U_e}$. (3) If B is Jordan-Bernstein and has a distributive lattice of ideals, then B is exclusive or normal.

Results in the Jordan-Bernstein case inspire and are used for the general case, where two possibilities appear for a Bernstein algebra with a distributive lattice of ideals: (a) $\dim B = \dim B^2$, that is, B is nuclear, (b) $\dim B = \dim B^2 + 1$.

It is proved that in both cases B is either exclusive or normal, so its structure is known from a previous study.

{For the entire collection see MR1751123 (2001a:17002)}

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