Bary-Soroker, Lior

On pseudo algebraically closed extensions of fields. (English) Zbl 1213.12006

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The paper deals with the Pseudo Algebraically Closed (PAC) field extensions. Based on a generalization of the techniques used for embedding problems to field extensions, the paper proves a number of new results and gives alternative proofs to known results.

Among the new results, the following seem to be most relevant:

- Theorem 1, which establishes that the Galois closure of any proper separable algebraic PAC extension is its separable closure;

- Theorem 3, which gives a characterization of finite PAC extensions. More precisely, let K/K_0 be a finite field extension. Then K/K_0 is PAC if and only if one of the following holds:

- (a) K_0 is a PAC field and K/K_0 is purely inseparable;
- (b) K_0 is real closed and K is its algebraic closure.

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MSC:

12E30 Field arithmetic

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