Universal Algebraic Geometry of Bands

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Given an algebra $\mathbb{A} = (A; F)$, we say that a set of n-tuples $S \subseteq A^n$ is an *algebraic set* if S is the set of solutions of a system of equations over A. The collection of all algebraic sets is called the *algebraic geometry* of $\mathbb{A}$ [1]. The algebraic geometry of an algebra only depends on the clone of its term operations. If two clones defined on the same underlying set have the same algebraic geometry, then we say that the two clones are *algebraically equivalent*. For a fixed algebra $\mathbb{A}$, two natural problems arise:

- characterize the algebraic sets over $\mathbb{A}$;
- characterize the clones on the set A that are algebraically equivalent to the clone of term operations of $\mathbb{A}$.

Some results of our ongoing research on these two problems will be presented in this talk, in the case when $\mathbb{A}$ is a normal band.

[1] B. Plotkin, Some results and problems related to universal algebraic geometry, *Internat. J. Algebra Comput.* **17(5-6)** (2007), 1133–1164.