Title: Which commutative idempotent binars are tractable?

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Abstract: A binar is a set equipped with a binary operation. Letting A denote a finite commutative idempotent binar (CIB), and R a set of subuniverses of powers of A, we ask whether the constraint satisfaction problem CSP(R) is solvable in polynomial time. It turns out that if S is the two-element semilattice, then the following are equivalent: (i) S is not a divisor of A; (ii) V(A) omits tame congruence type 5; (iii) A has an edge term. Thus, such CIBs are tractable. We will discuss some results and questions like these, and describe a few small CIBs whose tractability seems open.

This is joint work with Cliff Bergman and Jiali Li.