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Title: Completely meet irreducible pseudovarieties.

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A semigroup pseudovariety is a class of finite semigroups closed under sub-semigroups, homomorphic images and finitary direct products.

In the book “Q-Theory of Finite Semigroups”, Benjamin Steinberg and John Rhodes ask if the lattice of order increasing continuous self maps of the semigroup pseudovariety lattice has atoms. This turns out to be equivalent to finding compact completely meet irreducible elements in the semigroup pseudovariety lattice. In turn, this is equivalent to finding a pair of finite semigroups S and T such that a pseudovariety properly contains the pseudovariety of S if and only if it contains T . We show that there are infinitely many such pairs (S, T) , thus providing infinitely many of the desired atoms. This is joint work with Egri-Nagy, Steinberg and Rhodes.