

On compact open sets

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Stone duality for distributive lattices implies that every distributive lattice is isomorphic to the poset of open and compact sets of some space. I will show that every join semilattices with 0 (distributive or not) is isomorphic to the poset of open and compact sets of some space. The construction is functorial in various ways (to be explained in the talk).

The assertion is co-motivated by model theoretic questions about the analysis of structures that can be seen as global sections of a sheaf (like a ring or like a generalized product in the Feferman-Vaught theorem). I will first explain my interest in the theorem and then construct the asserted space.