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Extensions of Finite Distributive Lattices using $Min(L)$. Preliminary report.

A lattice is a partially ordered set where every pair of elements has a least upper bound and a greatest lower bound. Examples of distributive lattices include, but are not limited to, collection of open sets of a topological space and collection of ideals of a commutative ring. For a given distributive lattice L , the concepts of prime elements, $Spec(L)$, and minimal prime elements, $Min(L)$, of L are of great importance and can be used to understand various lattice-theoretic properties.

We will discuss the space of $Min(L)$ for a given finite distributive lattice L . Furthermore, using $Min(L)$ we will define various extensions of lattices, namely, rigid extension, r -extension, and r^b -extension, and results related to them. The ultimate goal is to answer an open question related to the extensions of finite distributive lattices: Is a rigid extension between finite distributive lattices equivalent to the r -extension? (Received September 25, 2012)