Congruence FD-maximal varieties

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A variety $\mathcal{V}$ is called congruence FD-maximal, if for every finite distributive lattice L the following two conditions are equivalent:

  (i) L is isomorphic to Con A for some $A \in \mathcal{V}$;

  (ii) for every meet-irreducible $x \in L$, the lattice $\uparrow x$ is isomorphic to Con T for some subdirectly irreducible $T \in \mathcal{V}$.

(Notice that (i) always implies (ii).) We consider some special types of congruence distributive varieties and present a criterion for them, characterizing the congruence FD-maximality.

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