Congruence Class Sizes in Finite Sectionally Complemented Lattices

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Abstract. The congruences of a finite sectionally complemented lattice $L$ are not necessarily uniform (any two congruence classes of a congruence are of the same size). To measure how far a congruence $\Theta$ of $L$ is from being uniform, we introduce Spec $\Theta$, the spectrum of $\Theta$, the family of cardinalities of the congruence classes of $\Theta$. A typical result of this paper characterizes the spectrum $S = (m_j \mid j < n)$ of a nontrivial congruence $\Theta$ with the following two properties:

1. $2 \leq n$ and $n \neq 3$.
2. $2 \leq m_j$ and $m_j \neq 3$, for all $j < n$.

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