Spectrum Problems for Structures Arising from Lattices and Rings

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Abstract. The Zariski spectrum of a commutative, unital ring, and the spectrum of a bounded distributive lattice, are both topological spaces, defined via so-called hull-kernel topologies. Moreover, the two classes of topological spaces arising in this way are identical (Hochster’s theorem and Stone duality, respectively), and they are called spectral spaces. Similar problems arise for other types of structures, among which Abelian ℓ-groups, Abelian f-rings, and ordered rings, yielding the ℓ spectrum, the Brumfiel spectrum, and the real spectrum, respectively. Those are all completely normal spectral spaces. This talk aims at comparing the different types of spectra arising in those ways. In particular, every second countable completely normal ℓ-spectrum is the ℓ-spectrum of some Abelian ℓ-group.