Algebraic Frames in Priestley Duality

Guram Bezhanishvili (*New Mexico State University*)
Sebastian Melzer (*New Mexico State University*)

By Priestley duality, the category of bounded distributive lattices is dually equivalent to the category of Priestley spaces. Specializing Priestley duality to frames provides a useful tool to study pointfree topology in the language of Priestley spaces. In this talk, we aim to continue this line of research by characterizing Priestley spaces of algebraic, arithmetic, coherent, and Stone frames. Using this machinery, we obtain new proofs of some classic duality results in pointfree topology. This includes the duality between the categories of coherent frames and spectral spaces, as well as the duality between the categories of algebraic frames and compactly based sober spaces.

Keywords: Pointfree topology, Duality theory, Algebraic frames