

Discrete covers of locales

Igor Arrieta

If L is a locale, the dual of the lattice $S(L)$ of its sublocales is a zero-dimensional locale, but it is typically non-Boolean. Recently [1] it has been shown that the system $S_c(L)$ consisting of joins of closed sublocales is always a frame, and for L subfit it is a complete Boolean algebra which coincides with the Booleanization of $S(L)$. Therefore, $S_c(L)$ can be seen as a discretization of L (for L subfit), and it has found several applications in point-free topology. In this talk, we will discuss the Booleanization of $S(L)$ for a general L , its close relation to the T_D axiom (in particular, giving a characterization for T_D -spatial locales) and some new aspects of its (non-)functorial behavior.

References

- [1] Picado, J., Pultr, A., Tozzi, A.: Joins of closed sublocales. *Houston J. Math.* 45, 21–38 (2019).