

Topological Aspects of Poset Spaces

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Abstract

We study two classes of spaces whose points are filters on partially ordered sets. Points in MF spaces are maximal filters, while points in UF spaces are unbounded filters. We give a thorough account of the topological properties of these spaces. We obtain a complete characterization of the class of countably based MF spaces: they are precisely the second-countable T_1 spaces with the strong Choquet property. We apply this characterization to domain theory to characterize the class of second-countable spaces with a domain representation.

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