

Algebras over an Integral Domain and Immediate Neighbors

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Abstract : Let S be an integral domain with field of fractions F and let A be an F -algebra. An S -subalgebra R of A is called S -nice if $R \cap F = S$ and the localization of R with respect to $S \setminus \{0\}$ is A . Denoting by W the set of all S -nice subalgebras of A , and defining a notion of open sets on W , one can view W as a T_0 -Alexandroff space. A characterization of the property of immediate neighbors in an Alexandroff topological space is given, in terms of closed and open subsets of appropriate subspaces. Moreover, two special subspaces of W are introduced, and a way in which their closed and open subsets induce W is presented.

Keywords : integral domains, Alexandroff topology, immediate neighbors, valuation domains

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