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A STUDY ON GRAPHS DEFINED ON L-SLICES

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Abstract: Let L be a locale with top element 1_L and J be a join semilattice with bottom element 0_J. The L-slice (σ, J) is the action of the locale on join semilattice satisfying certain properties. The concept of L-slices were modelled in tune with the modules in algebra. The benefit of studying L-slices is that we can approach the structure algebraically as well as topologically.

This paper deals with the graph theoretic approach to L-slices. The idea of relating graphs with algebraic structures was started by the work of Beck in [3]. The algebraic properties of L-slices prompted us to consider the possibility of various graphs that could be associated with L-slices. The article introduces two different graphs on L-slices. The total graph $\Gamma((T(\sigma, J))$ is defined. We derive a characterisation for such graphs to be nonempty. The structural properties of $\Gamma((T(\sigma, J))$ is studied. The weak Zariski Topology on (σ, J) gives us the graph $G_T(\omega^*)$. The conditions under which the graph is nonempty is examined. Also some of the structural properties of $G_T(\omega^*)$ is obtained.

Keywords and Phrases: Locale, L-slices, total graph.

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