1123-52-119   **Jay Kangel***, jay.kangel@gmail.com. *Using Extreme Subsets to Create and Topologize Closure Systems.*

The extreme subset relation for real vector spaces is abstracted to a binary relation on a set. This notion of extremity is used to construct topologies and closure systems for the underlying set. Conversely, given a closure system on the lattice of subsets of a set, we define a notion of extremity that will generate the given closure system. Additionally we construct a notion of extremity from a connected topological space.

As an application of this material recall that even in $\mathbb{R}$ there are sets whose minimal extreme subsets are not singletons. We provide necessary and sufficient conditions for a generalization of the Krein-Milman theorem that applies to closure systems and weakens most of the assumptions of that theorem. (Received August 22, 2016)