Meeting: 1004, Bowling Green, Kentucky, SS 8A, Special Session on Topology, Convergence, and Order, in Honor of Darrell Kent

1004-54-42 **Anthony W. Hager*** (ahager@wesleyan.edu), Dept. of Math. and C.S., Wesleyan Univ., Middletown, CT 06459, and **Richard N. Ball**. *Epi-convergence and -topology in archimedean lattice-ordered groups.*

The category W of anrchimedean l-groups with distinguished weak order unit includes all C(X)'s,all structures of real measurable functions mod null functions,etc. (with natural morphisms). Like any category,W has its epimorphisms (right-cancelable),which we have studied previously;there is a rich theory. Now we construct and study two set-presrving functors out of W:t,to semi-separated topological spaces;a,to Hausdorff convergence spaces. These are closely related to compact-open topology and convergence. For each B,the closure operators for a(B) and for t(B) coincide,and this closure captures epis in the sense:If a subobject A of B is dense,then A is epically embedded in B;conversely when A is divisible. Sometimes,not always,(B,t(B)) is Hausdorff,or a topological l-group. Always,(B,a(B)) is a Hausdorff convergence l-group. The superiority of the theory in Convergence Spaces can be traced to the behavior of suprema in the lattice of convergences on a set:the sup of products is the product of sups. (Received January 10, 2005)