

1014-06-1360

Richard N. Ball* (rball@math.du.edu), Department of Mathematics, 2360 S. Gaylord, Denver, CO 80208, and **Anthony W. Hager** (ahager@wesleyan.edu), Department of Mathematics, Wesleyan University, Middletown, CT 06459. *An algebraic characterization of pointwise convergence in $C(X)$* . Preliminary report.

Ever since its introduction by Hager and Robertson in their pivotal paper "Representing and ringifying a Riesz space," Symposia Math. 21(1977), the category \mathbf{W} , of archimedean lattice-ordered groups with designated weak order units, has proven to be a rich and supple context to investigate the interplay between the topological structure of X and the algebraic structure of $C(X)$. In particular, the constructs built into \mathbf{W} allow a suprisingly rich array of intrinsic convergences. We mention two relatives of uniform convergence recently investigated by the authors. The first, called epi-convergence because its density operator captures epic \mathbf{W} -embeddings, is connected with the compact open topology on $C(X)$. Completion (by Cauchy filters) with respect to the second convergence captures the ccc-hull, i.e., the counit of the localic Yosida adjunction. In this talk we introduce and discuss a new \mathbf{W} -convergence, just as natural as, and perhaps even more elegant than, those mentioned above, but unrelated to uniform convergence. In fact, this one can be regarded as an algebraic version of pointwise convergence on $C(X)$. (Received September 28, 2005)