

1068-54-43

**Anthony W. Hager\*** (ahager@wesleyan.edu), Dept. of Mathematics and Computer Science, Wesleyan University, Middletown, CT 06459, and **Richard N. Ball**. *A frame-theoretic feature of the  $l$ -group of Baire functions.*

$W$  is the category of archimedean lattice-ordered groups with weak order unit; the ubiquitous  $C(X)$ s are familiar examples. "ker" is the functor from  $W$  onto Lindelof completely regular frames:  $\ker G$  is the frame of kernels of  $W$ -maps out of  $G$ . For an embedding  $e$  in  $W$ , when is  $\ker(e)$  an isomorphism, surjection, injection, ...? For each of the cases isomorphism, surjection, there is a well-understood maximum such  $e$ . However, saying  $\ker(e)$  is injective puts no bound on the size of the codomain  $\text{cod}(e)$ , so we restrict (somewhat naturally) to epic  $e$  and  $\text{cod}(e)$  having no further epic extension:  $e$  is an "epicompletion" (of its domain). The epicompletions of an object  $G$  are ordered by:  $e$  is above  $f$  means  $he=f$  for some  $h$  (which means  $\text{cod}(f)$  is a quotient over  $G$  of  $\text{cod}(e)$ ). There is a maximum, the epicomplete reflection of  $G$ . The embedding  $b$  of  $C(X)$  into the Baire functions  $B(X)$  is an epicompletion of  $C(X)$  (which is the maximum when  $X$  is compact, otherwise usually not). Theorem. For an epicompletion  $e$  of  $C(X)$ ,  $\ker(e)$  is injective iff  $e$  is above  $b$ . (We don't know if every  $W$ -object has such an epicompletion.) (Received January 05, 2011)