

1112-57-241

**J Scott Carter\*** ([carter@southalabama.edu](mailto:carter@southalabama.edu)), Department of Mathematics and Statistics, ILB 325, Mobile, AL 36688. *Geometric, homological, and categorical considerations of local crossings of  $n$ -foams.*

An  $n$ -foam is a space that is locally modeled on a dual structure to an  $(n + 1)$ -simplex. Their crossings are parametrized by means of binary sequences. Colorings of the crossings can be given in terms of so-called endomorphic quasigroups: sets that have two binary operations which satisfy certain associativity, distributivity, and self-distributivity conditions. From such colorings and from the local pictures, a homology theory is formed. These ideas will be sketched and a plethora of pictures will be presented. (Received August 05, 2015)