1084-57-255 **Craig R Guilbault*** (craigg@uwm.edu), Department of Mathematical Sciences, University of Wisconsin-Milwaukee, Milwaukee, WI 53201, and **Frederick C Tinsley** (ftinsley@coloradocollege.edu), Department of Mathematics and Computer Scienc, Colorado College, Colorado Springs, CO 80903. *End structures and boundaries for open manifolds.* Preliminary report.

For a one-ended open manifold, the simplest end structure one can hope for is an open collar neighborhood of infinity; that is, a codimension 0 manifold neighborhood of infinity U homeomorphic to $\partial U \times [0, \infty)$. Characterizing "collarable" manifolds was the topic of L.C. Siebenmann's famous thesis from 1965.

In a series of papers we developed a weaker notion, called a pseudocollar, which is rigid enough to provide some useful structure, but flexible enough to be applicable to more complicated manifolds. Ultimately that effort yielded a set of three necessary and sufficient conditions for a high-dimensional open manifold to be pseudocollarable. In this talk we will discuss properties possessed by manifolds satisfying a subset of those conditions. An ultimate goal is to determine when an open manifold admits a $\mathcal{Z}$-set compactification. An interesting aspect of this work is the subtantial role played by group theory. (Received September 03, 2012)