

F.D. ANCEL, University of Oklahoma, Norman OK 73019, and L.C. SIEBENMANN, Université de Paris-Sud, 91405 Orsay, France. The construction of homogeneous homology manifolds. Preliminary report.

We generalize an inverse limit process due to W. Jakobsche [Fund. Math. 106 (1980), 127-134] for constructing homogeneous non-manifolds. One application is the construction, for  $n \geq 4$ , of a compact subset  $T$  of  $S^n$  with the following properties.

- (1)  $T$  is a non-ANR Čech homology  $(n-1)$ -sphere and Čech homology  $(n-1)$ -manifold.
- (2) There is an involution  $h$  of  $S^n$  whose fixed point set is  $T$ .
- (3) For any two points  $p$  and  $q$  of  $T$ , there is a homeomorphism  $f$  of  $S^n$  such that  $f(p) = q$ ,  $f(T) = T$  and  $h \circ f = f \circ h$ .
- (4) Each component of  $S^n - T$  is a contractible but non-Euclidean universal covering space of a closed  $n$ -manifold of the type discovered by M. Davis [Annals of Math. 117 (1983), 293-324].