

Meeting: 1006, Lubbock, Texas, SS 7A, Special Session on Topology of Dynamical Systems

1006-54-70 **Paul Bankston*** (paulb@mcs.mu.edu), Department of Mathematics, Marquette University, 1313 W. Wisconsin Avenue, Milwaukee, WI 53201-1881, and **Brian Raines** and **Wim Ruitenburg**.
Chainability and Hemmingsen's theorem.

On the surface, the definitions of chainability and Lebesgue covering dimension ≤ 1 are quite similar as covering properties. In this talk we explore the assertion that the similarity is only skin deep. In particular, there is a theorem of E. Hemmingsen that gives a clear first-order lattice-theoretic criterion for a compact Hausdorff space to have covering dimension at most any given whole number. We use an inverse limit argument, based on Isbell's characterization of chainability in metrizable continua, to show that no analogue of Hemmingsen's theorem is possible for chainability. Indeed, given a nondegenerate metrizable chainable continuum X and any whole number N , there is a three-set open cover of X that has no chain refinement with fewer than N sets in the chain. (Received February 03, 2005)