1116-53-253 **Eleanor McNair Abernethy*** (abernethy@math.utk.edu), Department of Mathematics UTK, 227 Ayres Hall, 1402 Circle Drive, Knoxville, TN 37996. *Homotopy Critical Spectrum.* Preliminary report.

Spectra are a classical way to understand the geometry of compact Riemannian manifolds in Differential Geometry. Two well-known spectra are the Laplace spectrum and the length spectrum. A relatively new spectrum is the covering spectrum, developed by Sormani and Wei (2003), which utilizes delta covers of a compact geodesic space and singles out values of δ where the covering spaces $X^\delta \subsetneq X^{\delta'}$ for all $\delta' > \delta$. More recently, Plaut and Wilkins (2012) developed the homotopy critical spectrum which arises from a discrete analog of the fundamental group construction for a compact metric space. It is already known that the covering and homotopy critical spectra are essentially the same on compact geodesic spaces. However, the homotopy critical spectrum is defined in the more general setting of metric spaces. de Smit, Garnet and Sutton (2010) extended the notion of the covering spectrum to any metric space. I will present results of comparing the definitions of the homotopy critical spectrum and the de Smit/Garnet/Sutton formulation of the covering spectrum on general metric spaces. (Received August 18, 2015)