1078-11-286   **Machiel van Frankenhuijsen*** (`vanframa@uvu.edu`). *Complex dimensions of Cantor strings and the Riemann zeros.*

After giving an overview of the idea of complex dimension, as conceived by Michel Lapidus and developed with collaborators, I will discuss the special class of Cantor strings. In this class, the spectral operator is invertible, thus yielding that the zeros of the Riemann zeta function do not lie in a vertical arithmetic progression. In closing, I will discuss how a strengthening of this theorem to uniformly finite vertical progressions would yield a zero free region of the Riemann zeta function. (Received December 12, 2011)