

1019-11-7

**Machiel van Frankenhuijsen\*** ([vanframa@uvsc.edu](mailto:vanframa@uvsc.edu)), 800 West University Parkway, Orem, UT 84058-5999. *Arithmetic progressions of zeros of the Riemann zeta function.*

We analyze the spectral problem for the so-called ‘truncated Cantor strings’. These strings have finitely many complex dimensions, located at  $D + in\mathbf{p}$ ,  $0 < |n| < N$ . For  $D = 1/2$ , the inverse spectral problem can be solved if  $N > 13\mathbf{p}$ , and for  $D > 1/2$ , this problem can already be solved for  $N > C(\log \mathbf{p})\mathbf{p}^{1/D-1}$ . We thus obtain corresponding theorems about the maximal number of zeros of  $\zeta(s)$  in the critical strip in vertical arithmetic progression. (Received April 11, 2006)