

1086-11-2600

Yoonbok Lee* (lee@math.rochester.edu), Department of Mathematics, University of Rochester, Rochester, NY 14627. *Fractional moments and density hypothesis of Hecke L -functions.*

Let $L(s)$ be a degree d L -function in the Selberg class. Let $N(\sigma, T)$ be the number of zeros of $L(s)$ in $\Re s > \sigma$ and $0 < \Im s < T$. The density hypothesis is $N(\sigma, T) \ll T^{1+c(1/2-\sigma)} \log T$ for $\sigma \geq 1/2$ and some $c > 0$. This is known only for small d . To understand the density hypothesis of $L(s)$ with large degree d , we investigate the fractional moment

$$I_k(\sigma, T) = \int_0^T |L(\sigma + it)|^{2k} dt$$

for small $k > 0$ and find some relations between $I_k(\sigma, T)$ and $N(\sigma, T)$. (Received September 25, 2012)