

## Errata to [J]

There is a gap in [J], Ch. 4, as was brought to my attention by D. Hejhal. To prove the results in [J], pp. 117-127, in addition to those axioms listed above, one must assume the following:

Missing Axiom: We have, for  $H > T^{1/2+\epsilon}$ , and  $\sigma \geq 1/2$ ,

$$N_L(\sigma, T+H) - N_L(\sigma, T) \ll_{L, \epsilon} \left( \frac{\sqrt{H}}{T} \right)^{\frac{1-2\sigma}{4}} H \log H, \quad (1)$$

where

$$N_L(\sigma, T) := \#\{\rho = \beta + i\gamma \mid L(\beta + i\gamma) = 0, 0 < \gamma < T, \beta \geq \sigma\}.$$

First, this “missing axiom” is a well-known result of A. Selberg [S] in the case  $L(s) = \zeta(s)$ . (It also seems to be known for Dirichlet L-series, L-functions of quadratic fields and Langlands standard L-functions for  $GL(2)$  [S’].) By this and another result of Selberg [S], the results of [J] are theorems in case  $L(s)$  is a Dirichlet L-function.

There is a typo on

- , page 84, line 4,  $C \log r / \sqrt{r}$  should be  $\frac{1}{50} \frac{\sqrt{\log r}}{r}$ , and on page 84, line 9,  $C \log r / r$  should be  $C \sqrt{\log r} / r$ .
- on page 158,  $S(t+h) - S(t)$  should be  $S_L(t+h) - S_L(t)$ ; in the remark there,  $\log k$  should be  $\log x$ .

## References

- [J] D. Joyner, Distribution Theorems of L-functions, Pitman, 1986
- [S] A. Selberg, “Contributions to the theory of the Riemann zeta function”, Arch. for Math. og Naturv. 48(1946)89-155
- [S’] A. Selberg, “Old and new conjectures and results about a class of Dirichlet series”, in Proc. Amalfi Conf. on Analytic Number Theory, (ed. E. Bombieri et al), 1989, Univ. di Salerno, 1992