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Abstracts of Short Communications and Posters

Section:

3. Number Theory and Arithmetic Algebraic Geometry

1991 MS Classification:
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Estimating Dirichlet L-serieses close to the line $1 + it$

Using higher derivatives of Dirichlet L-serieses known estimates for $|L(s,\chi)|$ can be improved. As application I can show that for the relative class number h^+ of the p-th cyclotomic field the estimate $\log h^+ = \frac{p}{4}\log p - \frac{p}{2}\log 2\pi + \log(1-\beta) + O(log^2 p)$, where β is a Siegel zero, if $p \equiv 3 \pmod 4$, otherwise this term does not occur at all. As another application the width of zerofree regions can be improved slightly.