
TIM TRUDGIAN, University of Lethbridge

Tightening the screws on $S(t)$

Backlund [1918] gave an estimate for $S(t)$, the argument of the Riemann zeta-function along the critical line. This estimate was improved, slightly, by Rosser [1941]: he showed that $|S(t)| \leq 0.137 \log t + 0.443 \log \log t + 1.588$, whenever $t \geq 1467$.

Such an estimate is used when approximating the potential contribution of zeroes off the critical line. This is used in explicit versions of the prime number theorem and the zero-free region. In this talk I will outline a sharpening of Rosser's result.