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**Michael J. Mossinghoff\***, Dept. of Mathematics and Computer Science, Davidson College, Davidson, NC 28035-6996, and **Timothy S. Trudgian**, College of Physical and Mathematical Sciences, Australian National University, Canberra, Australia. *A zero-free region for the Riemann zeta-function*. Preliminary report.

In his work on the Prime Number Theorem, de la Vallée Poissin proved that the Riemann zeta function  $\zeta(\sigma + it)$  has no zeros in the region  $\sigma > 1 - 1/(R \log |t|)$  and  $|t| \geq 2$ , with  $R \approx 30.47$ . While a zero-free region of this form is superseded asymptotically by results of Vinogradov and Ford, for more limited heights this classical region remains of interest, and finds application in various problems in number theory. As a result, a number of researchers have reduced the value of  $R$  in the de la Vallée Poissin zero-free region over the years, including Kadiri, who showed in 2005 that one can take  $R = 5.69693$ . We report on some experimental and analytic work on reducing this constant further. (Received August 15, 2014)