

ICM-9302-50 Lehmer Pairs of Zeros, the de Bruijn-Newman Constant Λ , and the Riemann Hypothesis, George Csordas, Wayne Smith and Richard S. Varga.

ABSTRACT We give here a rigorous formulation for a pair of consecutive simple positive zeros of the function H_0 (which is closely related to the Riemann ξ -function) to be a “Lehmer pair” of zeros of H_0 . With this formulation, we establish that each such pair of zeros gives a lower bound for the de Bruijn-Newman constant Λ (where the Riemann Hypothesis is equivalent to the assertion that $\Lambda \leq 0$). We also numerically obtain the following new lower bound for Λ :