ICM-9302-50 Lehmer Pairs of Zeros, the de Bruijn-Newman Constant $\Lambda$, 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 $\xi$-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 $\Lambda$ (where the Riemann Hypothesis is equivalent to the assertion that $\Lambda \leq 0$). We also numerically obtain the following new lower bound for $\Lambda$: 