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Carlos E Castro* (castro@ctsps.cau.edu), Clark Atlanta University, James P. Brawley Drive at Fair St, Atlanta, GA 30314. *A Fractal Supersymmetric Model for the Riemann zeta zeros.*

A fractal quantum mechanical model is proposed to implement the Hilbert-Polya proposal to prove the Riemann Hypothesis. To explicitly construct this fractal Schroedinger-like operator (that should reproduce the imaginary parts of the nontrivial zeta zeros for its spectrum) requires to use quantum inverse scattering methods that are related to a fractal-shaped potential of dimension $D = 1.5$ and given specifically by a Weierstrass function. The fractal analog of the Comtet-Bandrauk-Campbell formula in Supersymmetric Quantum Mechanics furnishes the set of equations which establish a one-to-one correspondence among the imaginary parts of the zeta zeros and the infinite number of phases appearing in the Weierstrass potential. (Received February 27, 2006)