1056-46-781   **Dorin Dutkay***, UCF, Department of Mathematics, Orlando, FL 32816. *Can one hear the shape of a fractal?*

We show how the spectral data contained in the Fourier series can be used to determine geometric properties of a fractal measure. In particular, we show that the Beurling dimension of a Fourier frame is equal to the Hausdorff dimension of the fractal. (Received September 17, 2009)