1037-43-46   **Dorin Ervin Dutkay*** (`ddutkay@mail.ucf.edu`), 4000 Central Florida Blvd, Orlando, FL 32816, and **Palle E.T. Jorgensen**. *Fourier series on fractals.*

We present some recent results on orthogonal bases of exponential functions for fractal measures, also called Fourier series for fractals. We prove that such bases can be constructed for measures associated to affine iterated function systems (even in higher dimensions). We show that there are fractal measures that have infinitely many Fourier series. (Received January 16, 2008)