

1152-41-178

Palle Jorgensen* (palle-jorgensen@uiowa.edu), palle-jorgensene@uiowa.edu, Iowa City, IA.

Fourier expansions for fractals. Preliminary report.

The talk covers a wider view of harmonic analysis on fractals, it begins with a construction by the author and Pedersen of explicit orthogonal Fourier expansions for certain fractals. And we cover several new directions, each one dealing with aspect of the wider subject. The results presented cover (among other papers) joint work with Dorin Dutkay. Fractals. Intuitively, it is surprising that any selfsimilar fractals in fact do admit orthogonal Fourier series. And our initial result generated surprised among members of the harmonic analyst's community. The theme of Fourier series on Fractals has by now taken off in a number of diverse directions; e.g., (i) wavelets on fractals, or frames; (ii) non-commutative analysis on graph limits, to mention only two. Two popular question are: "What kind of fractals admit Fourier series?" "If they don't, then what alternative harmonic analysis might be feasible?" (Received September 03, 2019)