

1063-42-147

Michael Christ* (mchrist@math.berkeley.edu), Department of Mathematics, UC Berkeley, Berkeley, CA 94720-3840. *On Random Multilinear Operators*. Preliminary report.

A venerable theme is the smallness of the Fourier transform of a measure, in the absence of linear structure. Prototypical examples include natural surface measures on curved submanifolds, and classes of random measures.

We investigate multilinear extensions of this theme, particularly in connection with two classes of matrices with random coefficients. Applications concerned with correlations, return times, and sparse subsequences in ergodic theory are given.

The techniques are elementary, relying on the humble TT^* method, allied with Fourier transformation, independence, large deviations, and entropy considerations. (Received August 14, 2010)