A REMARK ON A FOURIER BOUNDING METHOD OF PROOF FOR CONVERGENCE OF SUMS OF PERIODOGRAMS

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Abstract. This paper studies sums of periodograms in a random field setting. In a one dimensional or time series setting these can be studied using a method of cumulants, as done by Brillinger. This method does not carry over well to the random field case. Instead one should apply an argument as used by Rosenblatt. In order to have asymptotically correct confidence intervals, one needs to center these sums properly in the random field case.

Key words and phrases: Finite Fourier transforms, periodograms, random field, cumulants.