1001-60-81 **Yimin Xiao*** (`xiao@stt.msu.edu`), Department of Statistics and Probability, A-413 Wells Hall, Michigan State University, East Lansing, MI 48824. *Gaussian Random Fields and Salem Sets.* Preliminary report.

We study the asymptotic behavior at infinity of the Fourier transforms of random measures associated to certain Gaussian random fields including the Brownian sheet. In particular, we show that the images under these Gaussian random fields are Salem sets, which extends the results of Kahane (1985). (Received August 10, 2004)