962-42-1349 **Douglas S. Daniel*** (daniells@wfu.edu). *A Tauberian Style Theorem for Two-Dimensional Walsh Series.* Preliminary report.

The summability, convergence, and uniqueness of one-dimensional Walsh series is fairly well known. Hence looking at some of these ideas for two-dimensional Walsh series is of particular interest. This study has lead to a number of interesting results culminating in a Tauberian style theorem, which shows the relationship between summability and convergence of the square partial sums of two-dimensional Walsh series. After defining a two-dimensional quasi-measure, which eventually leads to a uniqueness result, the dyadic square partial sums of a two-dimensional Walsh series, S, are found to be very good and finite or very bad and infinite. This result leads to the Tauberian style theorem. It says that if, on a measurable subset of $[0,1)X\ [0,1)$, a two-dimensional Walsh series, S, has bounds on certain hybrid Cesaro means for each x in the subset, then there is a function, f, which is the limit if the square 2^n partial sums of S as n goes to infinity for almost every x in the measurable subset. (Received October 03, 2000)