

Exposé court

109 *New results in arithmetic statistics*

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In the 1980's, Greene introduced ${}_nF_{n-1}$ hypergeometric functions over finite fields using normalized *Jacobi sums*. The structure of his theory provides that these functions possess many properties that are analogous to those of the classical hypergeometric series studied by Gauss, Kummer and others. These functions have played important roles in the study of Apéry-style supercongruences, the Eichler-Selberg trace formula, Galois representations, and zeta-functions of arithmetic varieties. In this talk we will discuss the value distributions of simplest families of these functions. For example, we will consider ${}_2F_1$ and ${}_3F_2$ hypergeometric functions and will discuss their limiting value distributions. For the ${}_2F_1$ functions, the limiting distribution is semicircular, whereas the distribution for the ${}_3F_2$ functions is *Batman* distribution. This is a joint work with Ken Ono and Hasan Saad.