

SPEAKER: Ken Ono (Emory University)

TITLE: Zeta polynomials for modular forms

ABSTRACT: The speaker will discuss recent work on Manin's theory of zeta polynomials for modular forms. He will describe recent results which confirm Manin's speculation that there is such a theory which arises from periods of newforms. More precisely, for each even weight $k > 2$ newform f the speaker will describe a canonical polynomial $Z_f(s)$ which satisfies a functional equation of the form $Z_f(s) = Z_f(1-s)$, and also satisfies the Riemann Hypothesis: if $Z_f(\rho) = 0$, then $\text{Re}(\rho) = 1/2$. This zeta function is arithmetic in nature in that it encodes the moments of the critical values of $L(f, s)$. This work builds on earlier results of many people on period polynomials of modular forms. This is joint work with Seokho Jin, Wenjun Ma, Larry Rolen, Kannan Soundararajan, and Florian Sprung.