

Philadelphia Area Number Theory Seminar

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Higher Eisenstein Congruences

Abstract: Let $p \geq 3$ be prime. For squarefree level $N > 6$, we use a commutative algebra result of Berger, Klosin, and Kramer to bound the depth of Eisenstein congruences modulo p (from below) by the p -adic valuation of the numerator of $\frac{\varphi(N)}{24}$. We then show that if N has at least three prime factors and some prime $p \geq 5$ divides $\varphi(N)$, the Eisenstein ideal is not locally principal. Time permitting, we will illustrate these results with explicit computations as well as discuss generalizations to other families of modular forms.

Wednesday, August 9, 2017
2:40–4:00PM

Bryn Mawr College
Department of Mathematics
Park Science Center **328**

Tea and refreshments at 2:20PM in Park 339