

# Traces of Singular Moduli Over Function Fields

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In the 1990's and 2000's, Zagier proved remarkable results on traces of singular moduli that showed they satisfy various simplified identities on average and that ultimately they constitute the Fourier coefficients of a particular half-integral weight modular form. In the present talk we will consider ways to phrase these same questions over the rational function field in one variable over a finite field. In this setting singular moduli are defined as Drinfeld modular  $j$ -invariant on Heegner points in the Drinfeld upper half-space. Through work of Bae, Hsia, Wang, J. Yu, and J.-K. Yu, it is possible to define class polynomials over the rational function field whose roots are singular moduli but which also satisfy explicit connections with modular polynomials. Building on these constructions we devise average results for traces of singular moduli and recover formulas for Hurwitz class numbers that align with Zagier's results. Joint with A. El-Guindy, R. Masri, and G. Zeng.