Arithmetic of the divisors of modular forms and values of modular functions

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Abstract. In this lecture I will describe joint work with Winfried Kohnen and Jan Bruinier. We shall investigate the traces of the values of a certain sequence of modular functions over the divisors of modular forms. There are a variety of number theoretic consequences of these formulas. These include p-adic formulas for Hurwitz class numbers, lower bounds for class numbers of imaginary quadratic fields, universal recursion relations for the coeffiicents of modular forms, and exact formulas for the exponents in the infinite product expansion of any modular form on $\mathrm{SL}_2(Z)$.