Mathematics Colloquium

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Generalizing an Early Result of F. Klein on Linear Differential Equations

Abstract: We concentrate our attention on linear differential equations over compact Riemann surfaces and we address the problem of descent. An early result on this setting is Klein's Theorem which states that any second order linear differential equation with algebraic solutions is the pullback of a standard hypergeometric equation. M. Berkenbosch, M. van Hoeij and J.A. Weil introduced the concept of standard equation leading to Berkenbosch's generalization of Klein's theorem to the third order. In this talk I will explain how to broaden the scope of Klein's Theorem, via differential Galois theory, to equations with reductive Galois group of arbitrary order. All the concepts involved will be defined and I will motive the result with some examples.

Wednesday, January 27
4:00-5:00 pm
204 Smith Hall