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Valmira Hoxha* (vhoxha@risat.org), 368 SEB, Department of Mathematics, Rochester, MI 48309. *SL(2, k)-invariants of superelliptic curves*. Preliminary report.

In this talk we describe different families of superelliptic curves based on their group of automorphisms. Necessary conditions are given in terms $SL(2, k)$ -invariants of binary forms for curves of each family. These conditions give a nice connection between classical invariant theory and modern theory of algebraic curves. Moreover they are quite efficient to compute and provide a fast check in determining the automorphism group of the curve. (Received August 29, 2011)