ON THE HASSE–WITT INVARIANTS OF MODULAR CURVES

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ABSTRACT. We briefly discuss the relationship between several characterizations of the Hasse–Witt invariant of curves in characteristic p with the goal of computing its value in concrete instances. We study its asymptotic behaviour when dealing with the geometric fibres of curves of genus ≥ 2 defined over the rationals. Numerical evidence gathered for several modular curves supports certain conjectural distribution laws.