

A non-abelian algebraic criterion for good reduction of curves

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For a family of proper hyperbolic complex curves $f : X \rightarrow \Delta^*$ over a punctured disc Δ^* with semistable reduction at the center, Oda proved, with transcendental methods, that the outer monodromy action of $\pi_1(\Delta^*) \cong \mathbb{Z}$ on the classical unipotent fundamental group of the generic fiber of f is trivial if and only if f has good reduction at the center. In this talk I explain a joint work with B. Chiarellotto and A. Shiho in which we give a purely algebraic proof of Oda's result.