UNIFORMIZATION OF TRIANGLE MODULAR CURVES

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Abstract

In the present article, we determine explicit uniformizations of modular curves attached to triangle Fuchsian groups with cusps. Their Hauptmoduln are obtained by integration of non-linear differential equations of the third order. Series expansions involving integral coefficients are calculated around the cusps as well as around the elliptic points. The method is an updated form of a differential construction of the elliptic modular function $j$, first performed by Dedekind in 1877. Subtle differences between automorphic functions with respect to conjugate Fuchsian groups become apparent.

2000 Mathematics Subject Classification. Primary: 11F03, 11F06; Secondary: 11F30.

Key words. Arithmetical Fuchsian group, triangle group, Fuchsian differential equation, Schwarzian derivative, modular curve.