

Abstract

Let X be a proper, nonsingular, connected algebraic curve of genus g over the field \mathbf{C} of complex numbers. The algebraic fundamental group $\Gamma = \pi_1(X)$ is the profinite completion of the fundamental group $\pi_1^{\mathrm{top}}(X)$ of a compact oriented 2-manifold. Results about normal subgroup structure of Γ will be presented. It will be shown that these results give a complete solution of the congruence subgroup problem for arithmetic lattices in $\mathrm{SL}_2(\mathbf{R})$.