

Uniformization of the moduli space of pairs consisting of a
curve and a vector bundle

FRANCISCO PLAZA-MARTÍN *

Abstract

This paper is devoted to the study of the uniformization of the moduli space of pairs (X, E) consisting of an algebraic curve and a vector bundle on it. For this goal, we study the moduli space of 5-tuples (X, x, z, E, ϕ) , consisting of a genus g curve, a point on it, a local coordinate, a rank n degree d vector bundle and a formal trivialization of the bundle at the point. A group acting on it is found and it is shown that it acts (infinitesimally) transitively on this moduli space and an identity between central extensions of its Lie algebra is proved. Furthermore, a geometric explanation for that identity is offered. Some comments on the algebraic structure of such algebras will be given

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, e-mail: fplaza@usal.es