

Moduli spaces for principal bundles in arbitrary characteristic

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Received 1 June 2007; accepted 29 May 2008

Available online 30 June 2008

Communicated by Hiraku Nakajima

Abstract

In this article, we solve the problem of constructing moduli spaces of semistable principal bundles (and singular versions of them) over smooth projective varieties over algebraically closed ground fields of positive characteristic.

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Keywords: Principal bundle; Moduli space; Positive characteristic; Semistable reduction; Semistability

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1. Introduction

In this article, we introduce a formalism for dealing with principal bundles on projective manifolds defined over an algebraically closed ground field of arbitrary characteristic which enables us to construct and compactify the moduli space of Ramanan-stable principal bundles. As a major application, we obtain, under some restrictions on the characteristic of the base field, the solution of the long-standing problem of constructing the projective moduli space of semistable principal bundles (with semisimple structure group) on a smooth projective variety.

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