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Automorphism Groups and Moduli Spaces of Vector Bundles. Preliminary report.

Many theorems relate geometric properties of the Jacobian of a complex curve to the automorphism group of the curve. These properties involve subvarieties like the singular locus of the theta-divisor and various Brill-Noether loci. How can these theorems be extended to similar loci on the various moduli spaces of vector bundles over the curve?

This talk will describe examples of loci in the moduli spaces of vector bundles that depend on properties of the automorphism group of the curve. All of these examples depend on known results about Jacobians. The talk will also discuss attempts to find new loci. (Received August 28, 2009)