Integral and Rigid Elliptic Genera V. M. Buchstaber

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Each Hirzebruch genus is defined by the exponential of the corresponding formal group law. We will describe the formal group law associated with the general Weierstrass model of the elliptic curve with parameters $\mu = (\mu_1, \mu_2, \mu_3, \mu_4, \mu_6)$ and arithmetic Tate uniformization. We obtain the corresponding general elliptic genus which is $\mathbb{Z}[\mu]$ -integral.

Krichever genus is defined by the Baker-Akhiezer function of an elliptic curve and has 4 parameters. This genus has the fundamental rigidity property on S^1 -equivariant SU-manifolds. We will introduce the universal Krichever formal group law and describe the conditions necessary and sufficient for the elliptic formal group law to become the Krichever formal group law. We will obtain the list of corresponding integral genera with the rigidity property on S^1 -equivariant SU-manifolds.

Main definitions will be introduced during the talk. New results presented in the talk were obtained in recent joint works with E. Yu. Bunkova.