

Elliptic and Krichever formal group laws.

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The poster presents our main results on elliptic and Krichever formal group laws. The left part of the poster introduces the notions and results we use. The right part presents our main theorems.

The general elliptic formal group law is defined by the geometric group structure on the elliptic curve in the general Weierstrass model with arithmetic Tate uniformization. We present the explicit form of this formal group and the differential equations that define its exponential. As corollary we get an integer Hirzebruch genus over the ring over \mathbb{Z} of five parameters.

We introduce the formal group such that its exponential defines the famous Krichever genus and name it the Krichever formal group. We give the explicit form of this group and conditions necessary and sufficient for this group to be an elliptic formal group. This conditions correspond to four cases, two of which lead to the well-known χ_y - genus (the two-parametric Todd genus) and the Ochanine-Witten elliptic genus, and the other two are new. All four cases give rigid Hirzebruch genera. We have obtained results on the coefficient ring of the Krichever formal group, but the problem of full description of this ring over integers is still open.