

ADDITION LAWS ON JACOBIAN VARIETIES OF PLANE ALGEBRAIC CURVES

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LECTURE 1. ADDITION ON AN ALGEBRAIC GROUPOID

Addition law on the Jacobian of an algebraic curve is defined by the structure of the commutative algebraic groupoid over the space of parameters of the curve on the universal fiber-bundle of symmetric powers of the curves, according to the approach developed in [1]. The groupoid structure can be described explicitly in terms of entire rational functions on the curve. A general idea and illustration by examples of hyperelliptic curves [1] and a non-hyperelliptic curve will be presented.

LECTURE 2. ADDITION THEOREMS FOR \wp - AND ζ -FUNCTIONS

With the help of Jacobi inversion problem the construction of commutative algebraic groupoid converts into addition theorems for \wp - and ζ -functions [1]. On the other hand, the groupoid structure is equivalently described by apparatus of bilinear and trilinear operators [1].

REFERENCES

- [1] V. M. Buchstaber, D. V. Leikin, Addition Laws on Jacobian Varieties of Plane Algebraic Curves, *Nonlinear dynamics, Collected papers, Tr. Mat. Inst. Steklova*, Vol. 251 (2005), pp. 54–126.