

Stanford Algebraic Geometry — Seminar —

A GEOMETRIC CHARACTERIZATION OF PRYM VARIETIES

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Abstract

Prym varieties are a special class of abelian varieties, naturally embedded in Jacobians of curves having an involution. Many of geometric properties of Jacobians can be generalized to Prym varieties.

We will discuss the integrable-systems approach to the problem, characterizing Jacobians by the Kadomtsev-Petviah equation (Novikov's conjecture), and the Novikov-Veselov hierarchy for which theta functions of Pryms give solutions.

In analogy with the case of Welters' trisecant conjecture for Jacobians, recently proven by Krichever, we then construct a difference analog (discrete Schrodinger equation) of this hierarchy and use it to give a geometric characterization of Prym varieties by the existence of pairs of quadrisecant planes. We will make every attempt to explain the analytic terms and ideas in this abstract to geometers, and vice versa.

Based on joint work with Igor Krichever.

Friday, May 11

3:15 p.m.

Room 383-N

<http://math.stanford.edu/ag/s0607/>