

## Integrable systems and algebraic geometry

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### Abstract

Since mid 1970 algebraic geometry has become one of the most powerful tools in constructing solutions to a wide list of fundamental equations of mathematical physics. Novikov's conjecture that indecomposable principally polarized abelian variety is a Jacobian if and only if its theta-function provides a solution for the Kadomtsev-Petviashvili equation was the first indication that the theory of integrable systems might become a powerful tool for a solution of classical problem in algebraic-geometry. Novikov's conjecture was proved by Shiota. In the talk we will present a recent developments in applications of the soliton theory: proof of remarkable Welter's trisecant conjecture, characterization of Prym varieties, new proof of Diaz theorem

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