

Title: Abelian varieties in algebraic integrable systems and separation of variables.

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Abstract:

The most powerful method of explicit solving algebraic completely integrable systems is their Lax representation. The complex invariant tori of the systems are known to be Jacobian varieties of the corresponding spectral curves or, in most cases, Abelian subvarieties of the Jacobians, called Prym varieties. Then, if one wants to make a separation of variables for the system, it is necessary to relate the Prym variety with an algebraic curve. I will show how to do this for several classes of systems by using previous results of D. Mumford and P. van Moerbeke.