

Separation of variables for type D_n Hitchin systems on hyperelliptic curves.

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Darboux coordinates for the Hitchin systems were known only in case of Lie algebra $sl(2)$ and a curve of genus 2, until recently. A description of the class of spectral curves for the Hitchin systems on hyperelliptic curves of all genera was given by O.K. Sheinman (2018).

For Lie algebras of types A_n , B_n , C_n the Darboux coordinates were found there in an explicit form. The main goal of my talk is to exhibit the difficulties arising in the case D_n , and find out Darboux coordinates for $n=2$ (Lie algebra $so(4)$) and genus two.

The talk is a natural continuation of the talk by O.K. Sheinman, where the cases of Lie algebras A_n , B_n , C_n are discussed.