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Vector bundles on curves of genus one and the classical Yang-Baxter equation

Abstract: In my talk, I shall explain a geometric method to construct solutions of the classical Yang-Baxter equation, attaching to the Weierstrass family of plane cubic curves and a pair of coprime positive integers, a family of classical r-matrices. It turns out that all elliptic r-matrices arise in this way from smooth cubic curves. For the cuspidal cubic curve, I shall show that the obtained solutions are rational and compute them explicitly. I shall also give their desciption in terms of Stolin's classification and prove that they are degenerations of the corresponding elliptic solutions.

This talk is partially based on my joint article with Thilo Henrich arXiv:1202.5738v2.