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Anton Zeitlin* (zeitlin@lsu.edu), Department of Mathematics, Louisiana State University, Baton Rouge, LA 70803. *A geometric view of the Bethe ansatz equations: q-opers.*

The geometric realization of integrable systems related to quantum groups recently drew a lot of attention, primarily in the framework of enumerative geometry. In particular, the celebrated XXZ Bethe ansatz equations were realized as relations for the quantum K-theory ring of a certain variety. In this talk, I will give an overview of the different approach to obtain the Bethe ansatz equation via a group-valued q-difference version of connections, called q-opers. This is an appropriate q-deformation of relation between oper connections and Bethe ansatz equations for the Gaudin model, which is a nontrivial manifestation of the geometric Langlands correspondence. If time allows, I will relate this q-oper approach with the quantum q-Langlands correspondence and constructions of quantum K-theory. (Received February 03, 2020)