

Math/Phys seminar, Thursday, Sep 16, 2021
10:30 am on Zoom

[https://purdue-
edu.zoom.us/j/95318625523?pwd=MFNRdmsrQWI3dGdsNXpRa1N5dVd3QT09](https://purdue-edu.zoom.us/j/95318625523?pwd=MFNRdmsrQWI3dGdsNXpRa1N5dVd3QT09)

Meeting ID: 953 1862 5523
Passcode: 184222

Peter Koroteev, Math, UC Berkeley

q-Operators, QQ-Systems and Bethe Ansatz

We introduce the notions of (G, q) -opers and Miura (G, q) -opers, where G is a simply-connected complex simple Lie group, and prove some general results about their structure. We then establish a one-to-one correspondence between the set of (G, q) -opers of a certain kind and the set of nondegenerate solutions of a system of Bethe Ansatz equations. Additionally we associate to a (G, q) -oper a class of meromorphic sections of a G -bundle, satisfying certain difference equations, which we refer to as generalized q -Wronskians. We show that the QQ-systems and their extensions emerge as the relations between generalized minors, thereby putting the Bethe Ansatz equations in the framework of cluster mutations known in the theory of double Bruhat cells.