1116-58-1026   **Michael Gekhtman***, mgekhtma@nd.edu. *Inverse Moment Problem for Non-Abelian Coxeter Double Bruhat Cells.*

We introduce a family of non-Abelian nonlinear lattices that generalize Coxeter-Toda lattices in GL(n) and show that matrix Weyl functions can be used to encode the Hamiltonian structure of these lattices, to establish their complete integrability and to explicitly solve them via the matrix generalization of the inverse moment problem. (Received September 16, 2015)