1138-81-359 **Rinat Kedem*** (rinat@illinois.edu), Department of Mathematics MC-382, University of Illinois, Urbana, IL 61801. *Integrable difference equations for generalized Hall Littlewood functions from Q-systems.*

The characters of generic fusion products of Kirillov-Reshetikhin modules, as defined by Feigin and Loktev, can be constructed from the solutions of the quantum Q-system. This is a discrete evolution equation for non-commuting variables with commuting conserved quantities, which makes it integrable. Using these conserved quantities acting on the characters above, one obtains Hamiltonian difference equations, which, in the special case of fusion of fundamental KR-modules, gives a q-difference Toda equations. This talk will present the basic construction and list open problems related to it. This is joint work with Philippe Di Francesco. (Received February 13, 2018)