Kenji Kajiwara

Kyushu University

TItle: Geometric description of discrete power function associated with the sixth Painlevé equation

Abstract: In this talk we consider the discrete power function associated with the sixth
Painlevé equation (P$\_{\rm VI}$), which is formulated as the cross-ratio equation with a similarity constraint.
It is known that it admits an explicit formula in terms of the hypergeometric tau function of P$\_{\rm VI}$
with a mysterious even-odd structure [1]. We first formulate this system on the cubic lattice with
$\widetilde{W}(A\_3^{(1)})$ symmetry. Then we construct the birational realization of the
action of $\widetilde{W}(A\_3^{(1)})$ as a subgroup of $\widetilde{W}(D\_4^{(1)})$ which is
the symmetry group of  P$\_{\rm VI}$. Under this geometric formulation, the even-odd structure
in the explicit formula is naturally understood by using the notion of projective reduction.

This is a joint work with N. Joshi, T. Masuda, N. Nakazono and Y. Shi [2].

References:
[1] H. Ando, M. Hay, K. Kajiwara and T. Masuda, Funkcial. Ekvac. 57(2014) 1–41.
[2] N. Joshi, K. Kajiwara, T. Masuda, N. Nakazono and Y. Shi, arXiv:1705.00445v1