

1096-34-2589

Anton Dzhamay* (adzham@unco.edu), School of Mathematical Sciences, University of Northern Colorado, Greeley, CO 80526. *On the geometry of difference Painlevé equations with symmetry group $E_6^{(1)}$* . Preliminary report.

It is known that, for each geometric type of a discrete Painlevé equation in Sakai's classification, there are many non-equivalent equations that correspond to different translation direction in the Picard lattice. It is also known that there are different sources for discrete Painlevé equations, such as the singularity confinement principle, isomonodromic approach, reductions from lattice equations, and so on. In this project we study the relationship between these different examples of difference Painlevé equations of type $A_2^{(1)*}$ (with the symmetry group $E_6^{(1)}$) by explicitly identifying their Okamoto surfaces of initial conditions and then comparing the resulting translational directions in the Picard lattice. (Received September 17, 2013)