Sophia University Mathematics Colloquium

When: Friday, Nov. 2, 2018, 17:30－18:30

Where: Room No. 201, Main Bldg., Ichigaya-Campus

Speaker: Rei Inoue (Chiba University)

Title: Cluster algebraic structure of geometric R-matrices

Abstract:

The geometric R-matrices are rational version of the combinatorial R-matrices acting on crystals. In this talk we consider the affine geometric R-matrix of symmetric tensor representations of the quantum group of affine A-type. We introduce cluster R-matrices as sequences of mutations in triangular grid quivers on a cylinder, and show that the affine geometric R-matrix is `compatible' with the cluster R-matrix. Further we study a quantization of the affine geometric R-matrix, compatible with the quantum cluster structure a la Fock and Goncharov. We also mention the invariants of the quantum affine geometric R-matrix, which are quantum analogues of the loop symmetric functions. This talk is based on a joint work with Thomas Lam and Pavlo Pylyavskyy.