THE UNIVERSITY   **OF HONG KONG**

Institute of Mathematical Research
Department of Mathematics

Geometry Seminar

Quantum dilogarithm identities
at root of unity

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Abstract

Quantum dilogarithm identities are remarkable identities satisfied by the quantum dilogarithm function, the simplest one being the celebrated pentagon identities. These identities are associated to mutation sequences of quivers in the theory of cluster algebras and their quantization, and they have a wide range of applications to mathematical physics and representation theory. In this talk I will review the theory of cluster algebra and the quantum dilogarithm function, and discuss the case when the deformation parameter q is a root of unity. In this limit, the compact quantum dilogarithm function degenerates into a cyclic dilogarithm, and we obtain new identities for it as well as its non-compact counterpart.

This is a joint work with Masahito Yamazaki.

Date: September 24, 2015 (Thursday)

Time: 4:30 – 5:30pm

Place: Room 210, Run Run Shaw Bldg., HKU

All are welcome