

update: February 19, 2024

Addenda to Program of East Asian Conference on Geometric Topology

The following speakers change the titles and abstracts of their talks.

February 19 (Monday)

ROOM 420 17:00–17:20

Stavros Garoufalidis *Southern University of Science and Technology*

Title: From 3d-skein theory to functions near \mathbb{Q}

Abstract: Motivated by the Quantum Modularity Conjecture and its arithmetic aspects related to the Habiro ring of a number field, we define a map from the Kauffman bracket skein module of an integer homology 3-sphere to the Habiro ring, and use Witten’s conjecture (now a theorem) to show that the image is an effectively computable module of finite rank that can be used to phrase the quantum modularity conjecture. Joint work with Thang Le.

February 20 (Tuesday)

ROOM 110 17:40–18:00

Andreani Petrou *OIST*

Title: The Harer-Zagier transform of the HOMFLY-PT polynomial

Abstract: The focus of this talk is the discrete Laplace transform of the HOMFLY-PT polynomial for knots, called the Harer-Zagier (HZ) transform, which is a rational function in two variables λ and q and encodes several interesting information. For some special families of knots it admits a fully factorised form. This is not true, however, for the majority of knots, for which it can only be decomposed as a sum of factorised terms. An interesting relation between this decomposition and Khovanov homology will be discussed. Moreover, we suggest that by fixing the variable $\lambda = q^\mu$, for some “magical” integer μ , the HZ transform of any knot can acquire a factorised form as a product of cyclotomic polynomials. Finally, I will talk about the zeros of HZ transform which exhibit an intriguing behavior.