The Cassels-Tate pairings and the arithmetic BF theory for Selmer groups

Jeehoon Park

QSMS / Seoul National University

The goal of this talk is to recast the Cassels-Tate pairings in the framework of arithmetic topological quantum field theory (the arithmetic BF theory); such an interpretation of the Cassels-Tate pairing in terms of the arithmetic BF theory naturally leads to the notion of the quantum path integral associated to the Cassels-Tate pairing and its entanglement entropy. We provide certain formulas for the quantum path integral and compute its entanglement entropy.