Studying knots and links via net diagrams

Sang Youl Lee

Pusan National University

Abstract. A net diagram is a knot or link diagram obtained from a quasitoric braid diagram by replacing each positive (respectively, negative) crossing with positive (respectively, negative) half-twists. Due to some recent works, net diagrams for knots and links turned out to have various ramifications and applications to study invariants for knots and links, including the Casson invariant, genus, delta unknotting number, Alexander polynomial, Jones polynomial and so on. In this talk, we will discuss some recent contributions towards MFW inequality and the Jones conjecture on a minimal braid representation, the Tripp conjecture on the canonical genus for Whitehead doubles of alternating knots and the Hoste's conjecture on the Alexander polynomial of alternating knots via net diagrams. This is partly a joint work with H. J. Jang and M. Seo.