

Title: Orbital L -functions and knot superpolynomials

Abstract: Orbital L -functions for GL_n have appeared in a number of works related to automorphic representation theory. Their importance has recently been highlighted by Arthur. It turns out that for function fields, the local factors of these L -functions have long been studied in algebraic geometry, as Hilbert zeta functions of curve singularities.

Drawing inspiration from the Oblomkov-Rasmussen-Shende conjecture, I will formulate a closely related conjecture equating the local factors with what are essentially the knot superpolynomials introduced by Cherednik-Danilenko, Dunfield-Gukov-Rasmussen, and others. This applies in the tamely ramified case over any non-archimedean local field, even when there is no knot in the picture. I will then explain recent progress towards this conjecture.