

Iterated formulas for motivic Milnor fibers of quasi-ordinary surface singularities

Manuel González Villa

Manuel González Villa (villa@mathi.uni-heidelberg.de)
Ruprecht Karls Universität Heidelberg, Germany

Mirel Caibăr (caibar@math.ohio-state.edu)
Ohio State University, USA

Gary Kennedy (kennedy@math.ohio-state.edu)
Ohio State University, USA

Lee McEwan (mcewan@math.ohio-state.edu)
Ohio State University, USA

Abstract Kennedy and McEwan have proposed a geometrical scheme to investigate the Milnor fibration of quasi-ordinary surface singularities and the horizontal and vertical fibrations of their transversal sections. Their formulas for the monodromy zeta function show a recursive relation between the invariant of the singularity and those of other two related singularities (a truncation and a derived object). In our current joint project we analyze this framework with the help of the motivic invariants of Denef and Loeser. In our talk we will prove recursive formulas for the motivic Milnor fibres of plane curves and quasi-ordinary surfaces. These are splice type formulas in the sense of Eisenbud and Neumann and are obtained independently of the formula due to Gonzalez Perez and the speaker. We will also report on progress about the transversal sections.