

Eta invariants of quasihomogeneous hypersurface singularities

We calculate the Eta-invariant of the odd signature operator relative to a certain metric on the Milnor bundle of a quasihomogeneous hypersurface singularity using certain global boundary conditions in terms of the data of its monodromy and variation mapping. This is done by representing this Eta-invariant as the Eta-invariant of a certain fibrewise double of the original bundle and expressing the latter as the mapping cylinder of a specific fibrewise isometry. In this situation, well-known cutting and pasting-laws for the Eta-invariant apply and give equality to a certain real-valued Maslov-type number, first introduced by Lesch/Wojciechowski, whose value in this case is a topological invariant of the Milnor bundle.