

Milnor fiber boundary of a non-isolated surface singularity

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Abstrak

This book targets the challenging non-isolated case. Let f be a complex analytic hypersurface germ in three variables whose zero set has a 1-dimensional singular locus. We develop an explicit procedure and algorithm that describe the boundary M of the Milnor fiber of f as an oriented plumbed 3-manifold. This method also provides the characteristic polynomial of the algebraic monodromy. We then determine the multiplicity system of the open book decomposition of M cut out by the argument of g for any complex analytic germ g such that the pair (f,g) is an ICIS. Moreover, the horizontal and vertical monodromies of the transversal type singularities associated with the singular locus of f and of the ICIS (f,g) are also described. The theory is supported by a substantial amount of examples, including homogeneous and composed singularities and suspensions. The properties peculiar to M are also emphasized.