

## 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.