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On the Betti numbers of the Milnor fibre of a certain class of hypersurface singularities.

Singularities, representation of algebras, and vector bundles (Lambrecht, 1985), 203–220, *Lecture Notes in Math.*, 1273, *Springer, Berlin*, 1987.

It is well-known that for an isolated hypersurface singularity one can compute the Milnor number (the middle Betti number of the Milnor fiber) as the complex dimension of the vector space $\mathcal{O}/\mathcal{J}$, where $\mathcal{J}$ denotes the ideal generated by the partial derivatives of the defining polynomial. Here the author gives similar algebraic formulas for the Betti numbers of Milnor fibers for certain nonisolated singularities called "isolated line singularities".

Such singularities were introduced and studied by D. Siersma [in *Singularities, Part 2* (Arcata, Calif., 1981), 485–496, Proc. Sympos. Pure Math., 40, Providence, R.I., 1983; MR0713274 (85d:32017)]. They have a one-dimensional complete intersection singular locus along which (away from 0) there is a transverse A_1 singularity. The formula derived here for the middle Betti number involves two terms, one being the dimension of the ideal defining the singular set modulo the Jacobian ideal, and the other involving an operator on holomorphic functions on the singular set.

In order to derive this formula, the author first proves the coherence of the relative de Rham cohomology for a larger class of "concentrated" singularities. Then he considers the spectral sequence for the Gauss-Manin system coming from the Hodge filtration. Using work by R. Pellikaan ["Hypersurface singularities and resolutions of Jacobi modules", Dissertation, Rijksuniv. Utrecht, Utrecht, 1985; per bibl.] it is then shown that the spectral sequence degenerates for isolated line singularities, giving the result.

The expression given is useful for explicit calculations.

{For the entire collection see MR0915165 (88h:14001)}

Reviewed by *Richard Randell*