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Embedded $\mathbf{Q}$-Resolutions for Yomdin-Lê Surface Singularities

Jorge Martín-Morales

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In a previous work we have introduced and studied the notion of embedded $\mathbf{Q}$-resolution, which essentially consists in allowing the final ambient space to contain abelian quotient singularities. Here we explicitly compute an embedded $\mathbf{Q}$-resolution of a Yomdin-L\^e surface singularity $(V,0)$ in terms of a (global) embedded $\mathbf{Q}$-resolution of their tangent cone by means of just weighted blow-ups at points. The generalized A'Campo's formula in this setting is applied so as to compute the characteristic polynomial. As a consequence, an exceptional divisor in the resolution of $(V,0)$, apart from the first one which might be special, contributes to its complex monodromy if and only if so does the corresponding divisor in the tangent cone. Thus the resolution obtained is optimal in the sense that the weights can be chosen so that every exceptional divisor in the $\mathbf{Q}$-resolution of $(V,0)$, except perhaps the first one, contributes to its monodromy.

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