

Image Milnor number and \mathcal{A}_e -codimension

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A theorem by D. Mond shows that if $f : (\mathbb{C}, 0) \rightarrow (\mathbb{C}^2, 0)$ is finite and has degree one onto its image $(Y, 0)$, then the \mathcal{A}_e -codimension is less than or equal to the image Milnor number, with equality if and only if $(Y, 0)$ is weighted homogeneous. Inspired by the previous inequality, we consider $f : (X, 0) \rightarrow (\mathbb{C}^2, 0)$, where $(X, 0) \subset (\mathbb{C}^n, 0)$ is an isolated complete intersection singularity of dimension one and f is a finite map germ of degree one onto its image $(Y, 0)$. We define the image Milnor number of f . Moreover if $f : (X, 0) \rightarrow (\mathbb{C}^2, 0)$ is a map germ, where $(X, 0)$ is a plane curve singularity we obtain the similar inequality. When $(X, 0) \subset (\mathbb{C}^n, 0)$ is irreducible weighted homogeneous and f is weighted homogeneous with the same weights of $(X, 0)$ we show that the \mathcal{A}_e -codimension is equal to the image Milnor number.