

Limits of intrinsic metrics on the vanishing  
variety of curve singularities

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The "set" of all metric spaces has a natural metric  
(See M.Gromov : Groups of polynomial growth and expanding maps,  
IHES preprint 1980). So we have the following problem : let

$$f : \mathbb{C}^{n+1} \rightarrow \mathbb{C}$$

have a singularity at 0, let  $X_t = \{z \in \mathbb{C}^{n+1} \mid f(z) = t \text{ and } \|z\| \leq \varepsilon\}$  be the vanishing variety.

For  $t$  small and  $t \neq 0$  we give  $X_t$  an intrinsic metric,  
for instance the Kobayashi metric. So it makes sense to study  
the limit behavior of the sequence  $X_{1/n}$ ,  $n = 1, 2, \dots$ , in the  
space of metric spaces. What limit do we get, how does the  
monodromy act on the limit etc. ? Only for curve singularities  
we can present a result.