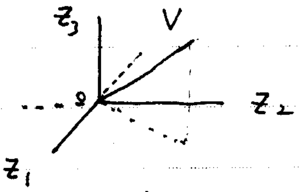
$\mathbb{R}^2$. More precisely, the volume of any C^∞ arc S is not, in general, expressed as the integral over S of a globally defined differential form on $\mathbb{R}^2$.」

To close this section, we discuss integration over analytic subvarieties of a complex manifold M. To beg--in with, we define the integral of a differential form φ on M over a possibly singular subvariety V to be the integral of φ over the smooth locus V^* of V. The first thing to prove is the

Proposition. V^* has finite volume in bounded regions.

Proof. Since the question is local and the volume increases by increasing the metric, it is sufficient to prove it for $V \subset \mathbb{C}^n$ with the Euclidean metric. Suppose V is of dimension k and choose coordinates on $\mathbb{C}^n$ so that, in a nbd of 0, V meets each of the coordinate $(n-k)$-planes $(z_{i_1} = z_{i_2} = \cdots = z_{i_k} = 0)$ only in discrete points.

「 I think it is possible



I hope sometime it is crytally clear to me.」

The $(1,1)$-form associated to the Euclidean metric on