

is a $d \geq \text{mult}_p(Z)$ sheeted branched covering, and consequently

$$\int_{\partial Z_\epsilon} \mathcal{S} = d \int_{\partial B_\epsilon} \beta = d. \quad \text{Q.E.D.}$$

\square $\pi : Z_\epsilon \rightarrow B_\epsilon$ is a d sheeted branched covering.

By p22, $\text{mult}_p(Z)$ is taken to be the number of sheets in the projection, in a small coordinate poly disc on M around p , of Z onto a generic p -dimensional poly disc.

If B_ϵ is the generic poly disc, then $d = \text{mult}_p(Z)$.

If not,

then we have a contradiction, for if we deform B_ϵ slightly, still we have a d -sheeted branched covering. $\Rightarrow B_\epsilon$ is the generic poly disc.

$\Rightarrow d = \text{mult}_p(Z), \Rightarrow d \geq \text{mult}_p(Z)$.

$$\int_{\partial Z_\epsilon} \mathcal{S} = \int_{\partial Z_\epsilon} \pi^* \beta = d \int_{\partial B_\epsilon} \beta = d$$

Since $\mathcal{S} = \pi^* \beta$, which implies that \mathcal{S} is independent of w -coordinate.

$$\int_{\partial B_\epsilon} \beta = \int_{\partial B_\epsilon} C_n \frac{* (r \bar{a} r)}{r^{2p}} \quad \Bigg) \quad \left(\because \int_{B_\epsilon - B_\delta} d\beta = 0 \right)$$

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$\int_{B_\epsilon} \beta$ is independent of ϵ . \square