This implies that if $\pi_2^{-1}(\epsilon)$ meets $\tilde{V} \cap \tilde{W}$ at (p, ϵ) transversely, then V meets $W+\epsilon$ at p transversely.

Given any vector $v \in T_p\Delta'$, since $T_pV + T_p(W+\epsilon) = T_p\Delta'$, $\exists$ $\alpha(t) \in V$ $\beta(t) \in W+\epsilon$ s.t $\alpha(0) = \beta(0) = p$, and $\alpha'(0) + \beta'(0) = v$.

Let $\gamma(t) = \alpha(t) - \beta(t) + \epsilon$. $\Rightarrow$ $\gamma(0) = \epsilon$

$\Rightarrow$ $(\alpha(t), \gamma(t)) \in \tilde{W}$ since $\alpha(t) - \gamma(t) = \beta(t) - \epsilon \in W$

$\Rightarrow$ $(\alpha'(0), \gamma'(0)) = (\alpha'(0), v) \in T_{(p,\epsilon)}(\tilde{V} \cap \tilde{W})$

$\Rightarrow$ Since $T_{(p,\epsilon)}\ \pi_2^{-1}(\epsilon) = (T_p\Delta', 0)$,

$\pi_2^{-1}(\epsilon)$ meets $\tilde{V} \cap \tilde{W}$ transversely at (p, ϵ), when V and $W+\epsilon$ meet transversely at p. ⌟

The intersection $\tilde{V} \cap \tilde{W} \subset \Delta' \times \Delta'$ is an analytic variety of dimension n, and so the projection $\pi_2 : \tilde{V} \cap \tilde{W} \to \Delta'$ expresses $\tilde{V} \cap \tilde{W}$ as a branched μ-sheeted cover of Δ'; accordingly, we see that for $\epsilon \in \Delta'$ lying outside an analytic subvariety of Δ', the varieties V and $W+\epsilon$ will meet transversely in μ points in Δ'. The number μ is called the intersection multiplicity of V and W at 0 and is written

$$\mu = m_0(V \cdot W).$$