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Meromorphic and holomorphic correspondence between complex manifolds

[1]

Definition. Meromorphic and holomorphic correspondence between compact complex manifolds

Let X, Y be compact complex manifolds of dimension k .

- A **holomorphic k -chain** Γ in $X \times Y$ is a formal linear combination of the form

$$\Gamma = \sum_{j=1}^N m_j V_j$$

where $m_j \in \mathbb{Z}_{>0}$ and V_j are distinct irreducible complex subvarieties of $X \times Y$ of pure dimension k .

- A holomorphic k -chain $\Gamma = \sum_{j=1}^N m_j V_j$ determines a **meromorphic correspondence** $X \rightarrow Y$ if for each V_j ,

$$\pi_X|_{V_j}, \pi_Y|_{V_j} : V_j \rightarrow X, Y$$

are surjective. Then Γ determines a set-valued map

$$F_\Gamma : X \rightarrow 2^Y \\ x \mapsto \bigcup_{j=1}^N \pi_Y(\pi_X^{-1}(x) \cap V_j)$$

- A meromorphic correspondence F_Γ is a **holomorphic correspondence** if $F_\Gamma(x)$ is finite for each $x \in X$.

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1. [corrDyn_ver2014-11.pdf](#)↔