

Heights of cycles:

X : smooth projective variety / \mathbb{C}

A, B : Null homologous in X with $A \cap B = \emptyset$
and $\dim A + \dim B + 1 = \dim X$

$$\langle A, B \rangle_{\infty} := \int_A \eta_B$$

$\eta_B = d \eta_B^c + \text{harmonic}$, where

$$-d = \partial + \bar{\partial}, \quad \eta_B^c = \frac{i}{2\pi} (\bar{\partial} - \partial)$$

Example: $X = \mathbb{P}^1$, $A = [\lambda] - [1]$

$$B = [\infty] - [0]$$

$$\eta_B = \log |z| \quad \langle A, B \rangle_{\infty} = \log |\lambda|$$