⌈ $$w_i = \frac{w_i'}{w_0'} \qquad i \neq j$$

$$\frac{dw_i}{w_i} = \frac{1}{w_i} d\left(\frac{w_i'}{w_0'}\right) = \frac{1}{w_i} \frac{w_0' dw_i' - w_i' dw_0'}{w_0'^2}$$

$$= \frac{1}{w_i} \frac{1}{w_0'} dw_i' - \frac{1}{w_i} \frac{w_i'}{w_0'^2} dw_0'$$

$$= \frac{w_0'}{w_i'} \frac{1}{w_0'} dw_i' - \frac{w_0'}{w_i'} \frac{w_i'}{w_0'^2} dw_0'$$

$$= \frac{dw_i'}{w_i'} - \frac{dw_0'}{w_0'}$$

$i = j$. $\qquad w_j = \dfrac{1}{w_0'}$

$$dw_j = d\left(\frac{1}{w_0'}\right) = \frac{-dw_0'}{w_0'^2} = -dw_0' \cdot \frac{1}{w_0'^2}$$

$$\frac{dw_j}{w_j} = w_0' \frac{1}{w_0'^2}(-dw_0') = -\frac{dw_0'}{w_0'}$$ ⌋

⌈ $$\omega = \frac{dw_1}{w_1} \wedge \cdots \wedge \frac{dw_n}{w_n} = \left(\frac{dw_1'}{w_1'} - \frac{dw_0'}{w_0'}\right) \wedge \left(\frac{dw_2'}{w_2'} - \frac{dw_0'}{w_0'}\right) \wedge \cdots \wedge \underbrace{\left(\frac{-dw_0'}{w_0'}\right)}_{j} \wedge$$

$$\cdots \wedge \left(\frac{dw_n'}{w_n'} - \frac{dw_0'}{w_0'}\right) = \frac{dw_1'}{w_1'} \wedge \frac{dw_2'}{w_2} \wedge \cdots \left(-\frac{dw_0'}{w_0'}\right) \wedge \cdots \wedge \left(\frac{dw_n'}{w_n'}\right)$$

$$= (-1)^j \left(\frac{dw_0'}{w_0'}\right) \wedge \left(\frac{dw_1'}{w_1}\right) \wedge \cdots \wedge \widehat{\frac{dw_j'}{w_j'}} \wedge \cdots \wedge \left(\frac{dw_n'}{w_n'}\right).$$ ⌋

Thus we see that ω has likewise a single pole along the hyperplane $(z_0 = 0)$, and consequently

$$K_{\mathbb{P}^n} = [(\omega)] = [-(n+1)H].$$ every divisor of $\mathbb{P}^n$ is linearly equivalent to $H \subset \mathbb{P}^n$. "$\mathbb{P}^{n-1}$"

⌈ ω is a globally defined meromorphic n-form on $\mathbb{P}^n$ with a single pole for each hyperplane $(z_i = 0)$ for $i = 0, 1, \cdots n$.

$\Rightarrow$ ω is a meromorphic section of $K_{\mathbb{P}^n}$ $\Rightarrow$ $K_{\mathbb{P}^n} = [(\omega)] = [-(n+1)H]$.