$$\mathrm{Res}_p\left(\frac{\eta\psi}{s\cdot s'}\right)$$

has intrinsic meaning since $\eta\psi \in \mathcal{O}(K+2L)_p$ and $s\cdot s' \in \mathcal{O}(2L)_p$.

Pf ① $p \notin P$

$$\mathcal{O}_P(L)_p = \frac{\mathcal{O}(L)_p}{\mathcal{J}_P(L)_p} = 0 \quad \text{i.e } \mathcal{J}_P(L)_p = \mathcal{O}(L)_p$$

$\Rightarrow \eta \in \mathcal{J}_P(L)_p = \mathcal{O}(L)_p \qquad \eta(p) \neq 0.$

$\Rightarrow \mathrm{Res}_p\left(\frac{\eta\psi}{s\cdot s'}\right) = 0$

② $p \in P$

As P674 note, we may assume that $s(z_1, z_2) = z_1^2 \quad s'(z_1, z_2) = z_2^3$ locally.

$\Rightarrow \eta \in \mathcal{J}_P(L)_p$ may be written as $f_1 s + f_2 s'$ where f_1, f_2 holomorphic functions of z_1, z_2.

$$\Rightarrow \frac{\psi\eta}{s s'} = \frac{g(f_1 s + f_2 s')}{s s'} dz_1 \wedge dz_2$$

$$= \frac{g f_1}{s'} dz_1 \wedge dz_2 + \frac{g f_2}{s} dz_1 \wedge dz_2$$

$$= \frac{g f_1}{z_2^3} dz_1 \wedge dz_2 + \frac{g f_2}{z_1^2} dz_1 \wedge dz_2$$

$$\Rightarrow \mathrm{Res}_0\left(\frac{\psi\eta}{s s'}\right) = \mathrm{Res}_{(0,0)}\left(\frac{\psi\eta}{s s'}\right) = \int_{|z_1|=\epsilon_1}\int_{|z_2|=\epsilon_2} \frac{g f_2}{z_1^2} dz_1 \wedge dz_2$$

$$+ \int_{|z_2|=\epsilon_2}\int_{|z_1|=\epsilon_1} \frac{g f_1}{z_2^3} dz_1 \wedge dz_2 = 0, \quad \text{sin} \quad \int_{|z_2|=\epsilon_2} \frac{g f_2}{z_1^2} dz_1 =$$