

$$At \left(-t, -\frac{t(1+r)}{r}\right), \quad J(f_t) = \frac{t^2(1+r)(1-r)}{r}$$

Unless $r = 1, -1, \frac{1}{2}$,

$J(f_t) \neq 0 \Rightarrow f_t$ has only \checkmark distinct & nondegenerate zeros. for $t \neq 0$

Since $r \neq 1$.

$$\Rightarrow \left(\frac{1}{2\pi i}\right)^2 \int_{|f_t - p_t| = \epsilon} \frac{df_{1t}}{f_{1t}} \wedge \frac{df_{2t}}{f_{2t}} = 1 \quad (\because J(f_t) \neq 0 \text{ at } p_t)$$

$$\Rightarrow \left(\frac{1}{2\pi i}\right)^2 \int_{\substack{|xy| = \epsilon \\ |(x-y)(x-ry)| = \epsilon}} \frac{dx y}{xy} \wedge \frac{d(x-y)(x-ry)}{(x-y)(x-ry)}$$

$$= \left(\frac{1}{2\pi i}\right)^2 \sum_{i=1}^4 \int_{|f_t - p_{ti}| = \epsilon} \frac{df_{1t}}{f_{1t}} \wedge \frac{df_{2t}}{f_{2t}} = 4$$

In general, we may have f_t which has distinct & nondegenerate zeros. i.e. even if $r = -1$ or $\frac{1}{2}$.")

$$h^0(P^2, \mathcal{O}_P) = 12.$$