

\Rightarrow Let φ

I think. in $\bigoplus_{D \in \text{Div} M} \mathbb{C}_D$, D is an irreducible divisor on M .

$$\Rightarrow R : A'(\Omega(*)) \longrightarrow \bigoplus_{\substack{D \in \text{Div} M \\ \text{irreducible}}} \mathbb{C}_D \quad \text{given by}$$

$$\begin{array}{ccc} \varphi & \xrightarrow{\quad} & \bigoplus \lambda_i 1_{D_i} \\ \uparrow & & \uparrow \\ \mathcal{H}'(\Omega(*))_x & \longrightarrow & \bigoplus (\mathbb{C}_D)_x \\ & & D \text{ irreducible} \end{array} \quad \text{See Puzo}$$

$$(\varphi)_\infty = D_1 + D_2 + \cdots + D_k, \quad D_i \text{ irreducible at } x.$$

$$\Rightarrow \text{Let } \lambda_{\bar{i}} = \frac{1}{2\pi\sqrt{-1}} \int_{\gamma_{\bar{i}}} \varphi, \text{ for } \bar{i}=1, 2, \dots, k.$$

\Rightarrow Let D'_i be an irreducible global divisor containing D_i . For example, $D'_1 \supset D_1, D_2$ and $D'_3 \supset D_3, D_k$.

$$\Rightarrow R_i(\varphi) = \{(\lambda_1 + \lambda_2) 1_{D_1}(w), (\lambda_3 + \dots + \lambda_k) 1_{D_3}(w)\}$$

$\Rightarrow R_x$ is injective as shown above.

To show that R_x is onto, consider $(C_D)^x$ where D is irreducible in M .

\Rightarrow For some mbd W of x , $D = D_1 + \dots + D_k$, where D_i irreducible at x . Consider $\varphi = \lambda \frac{df_i}{f_i}$,

where $(f_i=0) = D_i \Rightarrow \frac{1}{2\pi\sqrt{-1}} \int_{D_i} \varphi \cdot 1_D \in (\mathbb{C}_D)_\lambda$ since $D_i \subset D$.