

As the authors pointed out on P705, there is subtlety on a sheaf map from  $\mathcal{O}(L)$  to  $\mathcal{I}_R(L)$ .

Locally, we can define a map as follows:

①  $p \in P_0$ .

Given  $\eta \in \mathcal{O}(L)_p$ ,

$\Rightarrow \left( \frac{\mathcal{O}(L)}{\mathcal{I}_R(L)} \right)_p$  is a complex vector space by P669

$\Rightarrow \left( \frac{\mathcal{O}(L)}{\mathcal{I}_R(L)} \right)_p$  has a basis  $\{ 1 + \mathcal{I}_R(L)_p, f + \mathcal{I}_R(L)_p, \dots$

$\dots + f^{n-1} + \mathcal{I}_R(L)_p \}$  by note P633 ~ P640.

$\Rightarrow \eta + \mathcal{I}_R(L)_p = (\alpha_1 + \alpha_2 f + \dots + \alpha_n f^{n-1}) + \mathcal{I}_R(L)_p$

$\Rightarrow \eta - (\alpha_1 + \alpha_2 f + \dots + \alpha_n f^{n-1}) = \sigma \in \mathcal{I}_R(L)_p$ .

$\Rightarrow \eta = \alpha_1 + \alpha_2 f + \dots + \alpha_n f^{n-1} + g_1 s + g_2 s'$

Define a map from  $\mathcal{O}(L)_p$  to  $\mathcal{I}_R(L)_p$  by

$$\eta \longmapsto g_1 s + g_2 s'$$

②  $p \notin P_0$

$\Rightarrow$  Define a map from  $\mathcal{O}(L)_p$  to  $\mathcal{I}_R(L)_p$  by

$$\eta \longmapsto \eta.$$

But the problem is that we can not define a sheaf map from  $\mathcal{O}(L)(U)$  to  $\mathcal{I}_R(L)(U)$ .