

Given any point $x \in M$, \exists an open set $U_x \subset M$ s.t

$$f|_{U_x} \in \mathcal{M}^*(U_x) \longrightarrow \bar{f}|_{U_x} \in \frac{\mathcal{M}^*}{\mathcal{O}^*}(U_x) \text{ s.t}$$

$$f|_{U_x} \mathcal{O}^*(U_x) = \bar{f}|_{U_x} \text{ and } \varinjlim_{U_p} \bar{f}|_{U_x} = (\bar{f} \circ f|_{U_x})(p)$$

where $U_p \ni p$ al $\forall p \in U_x$.

But since $\frac{f|_{U_x}}{f|_{U_y}} = 1$ if $U_x \cap U_y \neq \emptyset$,

$\{f|_{U_x} \mathcal{O}^*(U_x)\}$ gives an global section of the quotient sheaf $\frac{\mathcal{M}^*}{\mathcal{O}^*}$.

$\{f|_{U_x} \mathcal{O}^*(U_x)\} \equiv \{(f|_{U_x}, U_x)\}$ where

$$\frac{f|_{U_x}}{f|_{U_y}} = 1 \in \mathcal{O}^*(U_x \cap U_y)$$

② $\delta D = [D],$

$$H^0(M, \frac{\mathcal{M}^*}{\mathcal{O}^*}) \xrightarrow{\delta} H^1(M, \mathcal{O}^*).$$

$$\equiv H^0(U, \frac{\mathcal{M}^*}{\mathcal{O}^*})$$

$D = (f)$, f is a global section of $\frac{\mathcal{M}^*}{\mathcal{O}^*} \Rightarrow$
 f is represented by $\{(f_\alpha, U_\alpha)\}$ $f_\alpha \in \mathcal{M}^*(U_\alpha)$. $\frac{f_\alpha}{f_\beta} \in \mathcal{O}^*(U_\alpha \cap U_\beta)$