

Consider the sequence

$$0 \longrightarrow \mathcal{O}_M(E \otimes L^{m-1}) \longrightarrow \mathcal{O}_M(E \otimes L^m) \longrightarrow \mathcal{O}_V(E \otimes L^m) \longrightarrow 0.$$

Since V is smooth, as P174, V is connected.
See P139, for the sequence. \Rightarrow

By Theorem B, there exists m_1 such that for $m > m_1$,
 $H^1(M, \mathcal{O}(E \otimes L^{m-1})) = 0$, so that the restriction map

$H^0(M, \mathcal{O}(E \otimes L^m)) \longrightarrow H^0(V, \mathcal{O}(E \otimes L^m))$ will be
surjective.

$$\begin{aligned} H^0(M, \mathcal{O}_M(E \otimes L^{m-1})) &\longrightarrow H^0(M, \mathcal{O}_M(E \otimes L^m)) \longrightarrow H^0(M, \mathcal{O}_V(E \otimes L^m)) \\ &\longrightarrow H^1(M, \mathcal{O}_M(E \otimes L^m)) \longrightarrow \dots \end{aligned}$$

See P159, Theorem B. $\Rightarrow \exists m_1$ s.t. if $m > m_1$,
then $H^1(M, \mathcal{O}_M(L^m \otimes E)) = 0$. \Rightarrow

On the other hand, by induction there exists m_2 such that for $m > m_2$,

$H^0(V, \mathcal{O}_V(E \otimes L^m)) \longrightarrow (E \otimes L^m)_x \oplus (E \otimes L^m)_y$
is surjective.

We are using induction on $\dim M$. Since $\dim V < \dim M$, $\exists m_2$ s.t. if $m > m_2$,

$H^0(V, \mathcal{O}_V(E \otimes L^m)) \longrightarrow (E \otimes L^m)_x \oplus (E \otimes L^m)_y$
is surjective \Rightarrow

For $m > m_0 = \max(m_1, m_2)$, then the map (*) will be
surjective.

Similarly, for each of a generating set of cot-