$$\ulcorner\ \tilde{V}\cap E \overset{?}{=} \lim_{z_i\to 0}\left(z_i^{-m_0}\,\pi^*f=0\right)=\lim_{z_i\to 0}\left(z^{-m_0}\tilde{f}=0\right)=\lim_{z_i\to 0}\left(z^{-m_0}\sum_{m\geq m_0}C_a(z_i\cdot z(i)_1)^{a_1}\right.$$

$$\left.\cdots z_i^{a_i}\cdots(z_i\cdot z(i)_n)^{a_n}\right)=\lim_{z_i\to 0}\left(z_i^{m-m_0}\sum_{m\geq m_0}C_a\ z(i)_1^{a_1}\cdots\widehat{z_i^{a_i}}\cdots z(i)_n^{a_n}\right)$$

$$=\lim_{z_i\to 0}\left(z_i^{m-m_0}\sum_{\substack{m\geq m_0\\ \shortparallel\\ |a|}}C_a\left(\frac{z_1}{z_i}\right)^{a_1}\cdots\ \widehat{z_i^{a_i}}\ \left(\frac{z_n}{z_i}\right)^{a_n}=0\right)$$

$$=\lim_{z_i\to 0}\left(z_i^{m-m_0}\sum_{\substack{m\geq m_0\\ \shortparallel\\ |a|}}C_a\left(\frac{l_1}{l_i}\right)^{a_1}\cdots\left(\frac{l_n}{l_i}\right)^{a_n}=0\right)$$

$$=\lim_{z_i\to 0}\left(z_i^{m-m_0}\frac{1}{l_i^m}\sum_{\substack{m\geq m_0\\ \shortparallel\\ |a|}}C_a\ l_1^{a_1}\cdots l_n^{a_n}=0\right)$$

$$=\frac{1}{l_i^{m_0}}\sum_{\substack{m_0=m\\ \shortparallel\\ |a|}}C_a\ l_1^{a_1}\cdots l_n^{a_n}$$

$$\Rightarrow\ \tilde{V}\cap E=\left(\sum_{|a|=m_0}C_a\ l_1^{a_1}\cdots l_n^{a_n}=0\right)$$

For ?, $\pi^*V=(\tilde{f}=0)=\left(\sum_{m\geq m_0}\tilde{f}_m(z)\right)$

$$=\left(z_i^{m_0}\cdot z_i^{-m_0}\sum_{m\geq m_0}\tilde{f}_m(z)\right)$$

$$=\left(z_i^{m_0}\right)+\left(z_i^{-m_0}\sum_{m\geq m_0}\tilde{f}_m(z)\right)=m_0E+\tilde{V}$$

$\Rightarrow$ Since $m_0=\mathrm{mult}_p(V)=\mathrm{ord}_E(\pi^*V)$, $\tilde{V}=(z_i^{-m_0}\tilde{f})$

According to p175 ~ p176, the tangent cone to V at p is given by

$$T_p'(V)=\left(\sum_{m_0=|a|}C_a\ z_1^{a_1}\cdots z_n^{a_n}=0\right),\longleftrightarrow\left\{\sum\alpha_i\frac{\partial}{\partial z_i}\ \middle|\ \sum_{m_0=|a|}C_a\ \alpha_1^{a_1}\cdots\alpha_n^{a_n}=0\right\}\ (\text{p22})$$

The projective cone of V at p is $\left[\sum_{m_0=|a|}C_a\left(\frac{z_1}{z_i}\right)^{a_1}\cdots\left(\frac{z_n}{z_i}\right)^{a_n}\right.$

$$\left.=\sum_{m_0=|a|}C_a\ l_1^{a_1}\cdots l_n^{a_n}=0\ \right]=\mathbb{P}(T_p'(V))$$

$$E\longleftrightarrow\mathbb{P}(T_p'(M))\qquad\Rightarrow\ E\cap\tilde{V}=\{l\}\leftrightarrow\left[l_i\frac{\partial}{\partial z_i}\ \middle|\ 0=\sum_{m_0=|a|}C_a\ l_1^{a_1}\cdots l_n^{a_n}\right]=\mathbb{P}(T_p'(V))$$

$$l\longmapsto\left[l_i\frac{\partial}{\partial z_i}\right]$$