$\Rightarrow \quad {}'E_3^{0,1} = \ker d_2 / \mathrm{im}\, d_2 = \ker d_2 \subset {}'E_2^{0,1}$

$\underset{\overset{\shortparallel}{0}}{{}'E_3^{-3,3}} \longrightarrow {}'E_3^{0,1} \xrightarrow{d_3} {}'E_3^{3,1-3+1} = 0 \quad \Rightarrow \quad {}'E_4^{0,1} = {}'E_3^{0,1}$

$\Rightarrow \underset{\ker d_2}{{}'E_\infty^{0,1} = \cdots = {}'E_3^{0,1}} \hookleftarrow {}'E_2^{0,1}$ inclusion.

③ Note. from ${}'F^1\mathbb{H}^1 / {}'F^2\mathbb{H}^1 \cong {}'E_\infty^{1,0}$

$$0 \longrightarrow {}'F^2\mathbb{H}^1 \longrightarrow {}'F^1\mathbb{H}^1 \longrightarrow {}'E_\infty^{1,0} \longrightarrow 0.$$

④ Note, let $K^{p,q} = C^p(\underline{U}, \Omega^q(*)) \qquad K^n = \bigoplus_{p+q=n} K^{p,q}$

$${}'F^pK^{p+q} = K^{p,q} \oplus K^{p+1,q-1} \oplus \cdots \oplus K^{p+q,0}$$

$\Rightarrow$ If $n > p$, then ${}'F^nK^p = K^{n,p-n} \oplus K^{n+1,p-n-1} \oplus \cdots$

$K^{n,p-n} = C^n(\underline{U}, \Omega^{p-n}(*)) = K^{n+1,p-n-1} = \cdots = 0$

$\Rightarrow \quad {}'F^nK^p = 0$

Similarly, we get ${}''F^pK^{p+q} = K^{q,p} \oplus \cdots \oplus K^{0,p+q}$

and ${}''F^nK^p = \underset{\overset{\shortparallel}{0}}{C^{p-n}(\underline{U}, \Omega^n(*))} \oplus \underset{\overset{\shortparallel}{0}}{C^{p-n-1}(\underline{U}, \Omega^{n+1}(*))} \oplus \cdots$

$= 0$

Thus $\quad {}'F^1\mathbb{H}^1 \cong {}'E_\infty^{1,0}$

⑤ Note, $\underset{\overset{\shortparallel}{0}}{{}'E_2^{-1,1}} \longrightarrow {}'E_2^{1,0} \xrightarrow{d_2} {}'E_2^{3,0-2+1} = 0$

$\Rightarrow \quad {}'E_3^{1,0} = \ker d_2 = {}'E_2^{1,0}. \quad \Rightarrow \quad {}'E_2^{1,0} = {}'E_\infty^{1,0}$

$\Rightarrow$ By notes ①~⑤, we have an exact sequence

$$0 \to \underset{{}'E_\infty^{1,0} = {}'F^1\mathbb{H}^1}{\overset{\shortparallel}{{}'E_2^{1,0}}} \to \mathbb{H}^1 \longrightarrow {}'E_2^{0,1} \xrightarrow{d_2} {}'E_2^{2,0} \longrightarrow \underset{(*)}{\operatorname{coker} d_2} \to 0$$

$${}'E_\infty^{0,1} = \ker d_2$$