

$$\begin{array}{ccccc}
 {}''E_1^{p,q}(\underline{u}) & \xrightarrow{d_1} & {}''E_1^{p,q}(\underline{u}) & \xrightarrow{d_1} & {}''E_1^{p+1,q}(\underline{u}) \\
 \parallel & & \parallel & & \parallel \\
 H^q(\underline{u}, \mathcal{Q}^{p-1}(*D)) & \xrightarrow{d} & H^q(\underline{u}, \mathcal{Q}^p(*D)) & \xrightarrow{d} & H^q(\underline{u}, \mathcal{Q}^{p+1}(*D))
 \end{array}$$

$$\Rightarrow {}''E_2^{p,q}(\underline{u}) = H_d^p(H^q(\underline{u}, \mathcal{Q}^*(D)))$$

If $q > 0$, since $H^q(\underline{u}, \mathcal{Q}^{p-1}(*D)) = 0$, ${}''E_2^{p,q}(\underline{u}) = 0$

$$\begin{array}{ccccc}
 \text{If } q=0, & H^0(\underline{u}, \mathcal{Q}^{p-1}(*D)) & \xrightarrow{d} & H^0(\underline{u}, \mathcal{Q}^p(*D)) & \xrightarrow{d} & H^0(\underline{u}, \mathcal{Q}^{p+1}(*D)) \\
 & \parallel & & \parallel & & \parallel
 \end{array}$$

$$\begin{array}{ccccc}
 A^{p-1}(*D)(M) & \xrightarrow{d} & A^p(*D)(M) & \xrightarrow{d} & A^{p+1}(*D)(M) \\
 \parallel & & \parallel & & \parallel \\
 A^{p-1}(M-D) & & A^p(M-D) & & A^{p+1}(M-D)
 \end{array}$$

$$\Rightarrow H_{DR}^p(M-D) = {}''E_2^{p,0} = H_d^p(H^0(M, \mathcal{Q}^p(*D))) \dots (*)$$

$$\begin{array}{ccccc}
 {}''E_2^{p-2,q+1} & \xrightarrow{d_2} & {}''E_2^{p,q} & \xrightarrow{d_2} & {}''E_2^{p+2,q-1} \\
 \parallel & & \parallel & & \parallel \\
 0 & & 0 & & 0
 \end{array}$$

If $q > 0$

$$\Rightarrow {}''E_3^{p,q} = 0$$

$$\begin{array}{ccccc}
 \text{If } q=0, & {}''E_2^{p-2,1} & \longrightarrow & {}''E_2^{p,0} & \longrightarrow & {}''E_2^{p+2,-1} \\
 & \parallel & & \parallel & & \parallel \\
 & 0 & & 0 & & 0
 \end{array}$$

$$\Rightarrow {}''E_3^{p,0} = {}''E_2^{p,0}$$

Continue this process, then we get

$$\text{if } q > 0, \quad {}''E_2^{p,q}(\underline{u}) = {}''E_3^{p,q}(\underline{u}) = \dots = 0$$

if $q=0$,

$${}''E_2^{p,0}(\underline{u}) = {}''E_3^{p,0}(\underline{u}) = \dots = H_d^p(H^0(M, \mathcal{Q}^p(*D)))$$

Since $F_{H^{p+q}(C^*(\underline{u}), D)}^p = {}''E_r^{p,q}(\underline{u}) \oplus \dots \oplus {}''E_r^{p+q,0}(\underline{u}) \oplus$
 \uparrow
 $F_{H^{p+q+1}(C^*(\underline{u}), D)}^{p+q+1}$
 where $C^*(\underline{u})$ is the associated single complex,