$q=1 \quad ({}'E_{\mathbb{R}^*})_2^{p,1} = 0 \quad \Rightarrow \quad ({}'E_{\mathbb{R}^*})_3^{p,1} = 0 = \cdots = ({}'E_{\mathbb{R}^*})_\infty^{p,1} = 0$

$q>1 \quad ({}'E_{\mathbb{R}^*})_2^{p,q} = \cdots = ({}'E_{\mathbb{R}^*})_\infty^{p,q} = 0$

$$\Rightarrow \quad ({}'E_{\mathbb{R}^*})_2^{p,0} = \cdots = H^p(M, \mathbb{R})$$

$$({}'E_{\mathbb{R}^*})_2^{p,q} = \cdots = 0 \qquad q>0$$

$$F^0\mathbb{H}^q = {}'E_r^{0,q} \oplus F^1\mathbb{H}^q = {}'E_r^{0,q} \oplus {}'E_r^{1,q-1} \oplus F^2\mathbb{H}^q$$

$$\overset{\shortparallel}{\mathbb{H}^q} = {}'E_r^{0,q} \oplus {}'E_r^{1,q-1} \oplus \cdots \oplus {}'E_r^{q,0}$$

$\Rightarrow \quad \mathbb{H}^q(X, \mathbb{R}^*) = {}'E_r^{0,q} \oplus {}'E_r^{1,q-1} \oplus \cdots \oplus {}'E_r^{q,0}$

If $q=0$, $\quad \mathbb{H}^0(X, \mathbb{R}^*) = {}'E_r^{0,0} = {}'E_2^{0,0} = ({}'E_{\mathbb{R}^*})_2^{0,0} = H^0(M, \mathbb{R})$

If $q>0$, $\quad \mathbb{H}^q(X, \mathbb{R}^*) = {}'E_r^{q,0} = ({}'E_{\mathbb{R}^*})_2^{q,0} = H^q(M, \mathbb{R})$

Thus $\mathbb{H}^q(X, \mathbb{R}^*) = H^q(M, \mathbb{R})$.

Here we put ${}'E_r^{p,q} = ({}'E_{\mathbb{R}^*})_2^{p,q}$ sometimes. ⌟

On the other hand, by the partition of unity argument $H^q(M, \mathcal{A}^*) = 0$ for $q>0$, and so

$$({}''E_{\mathcal{A}^*})_2^{p,q} = \begin{cases} H^p_{DR}(M), & q=0 \\ 0, & q>0. \end{cases}$$

⌜ See P42. Put ${}''E_{\mathcal{A}^*} = {}''E$.

$X=M$

$$({}''E)_{1+1}^{p,q} = H_d^q(H^p(X, \mathcal{A}^*)) = \frac{\ker d}{\operatorname{Im} d}$$

$$H^q(X, \mathcal{A}^{p-1}) \xrightarrow{d} H^q(X, \mathcal{A}^p) \xrightarrow{d} H^q(X, \mathcal{A}^{p+1}) \longrightarrow$$ See note P439 back.

$q>0 \Rightarrow \quad {}''E_2^{p,q} = 0$ since $H^p(X, \mathcal{A}^q) = 0$ for $q>0$.