is zero, too. $\Rightarrow$ $d_2 : H^p(B, R^{n-k}) \longrightarrow H^{p+2}(B, R^{n-k-1})$

$$H^p(B, R^{n-k}) = H^p(B, P^{n-k}) \oplus \cdots \oplus H^p(B, L^\ell P^{n-k-2\ell}) \oplus \cdots$$

is zero. ⌟

" For the proof for $d_3 = 0$."

As we saw above, $\underset{n-k}{d_2} = 0$. $\Rightarrow$ $E_3^{p,q} = E_2^{p,q} = H^p(B, R^q)$.

$\Rightarrow$ $L^k : E_3^{p,n-k} = H^p(B, R^{n-k}) \longrightarrow H^p(B, R^{n+k}) = E_3^{p,n+k}$ is isomorphic.

$\cdots\ n-k, \ \cdots \ , n-1, \ n, \ n+1, \ \cdots \ n+k \ \cdots$

$\Rightarrow$ It will suffice to show that $d_3 = 0$ on $E_3^{p,n-k}$.

$$\begin{array}{c} H^p(B, R^{n-k}) = E_3^{p,n-k} = H^p(B, P^{n-k}) \oplus H^p(B, LP^{n-k-2}) \oplus \cdots \\ \downarrow d_3 \\ H^{p+3}(B, R^{n-k-2}) \end{array}$$

Again we have the following diagrams.

$$\begin{tikzcd} H^p(B, P^{n-k}) \arrow[r, "d_3"] \arrow[d, "L^{k+1} = 0"] & H^{p+3}(B, R^{n-k-2}) \arrow[d, "L^{k+1}", "\cong"'] \\ H^p(B, R^{n+k+2}) \arrow[r, "d_3"] & H^{p+3}(B, R^{n+k}) \end{tikzcd} \quad \& \quad \begin{tikzcd} H^p(B, P^{n-k-2}) \arrow[r, "d_3"] \arrow[d, "L", "\text{onto}"'] & H^{p+3}(B, R^{n-k-4}) \arrow[d, "L"] \\ H^p(B, LP^{n-k-2}) \arrow[r, "d_3"] & H^{p+3}(B, R^{n-k-2}) \end{tikzcd}$$

$\Rightarrow$ As before, $d_3 = 0$. Continue & $d_m = 0$ for all m. ⌟