where $$Gr^p K^* = \frac{F^p K^*}{F^{p+1} K^*}$$

and the differential is the obvious one. The filtration $F^p K^*$ on K^* also induces a filtration $F^p H^*(K^*)$ on the cohomology by

$$F^p H^q(K^*) = \frac{F^p Z^q}{F^p B^q}.$$

$\ulcorner$

$$\begin{array}{ccccccccc}
K^0 & \xrightarrow{d} & K^1 & \xrightarrow{d} & K^2 & \xrightarrow{d} & K^3 & \to \cdots \to & K^q \\
\cup & & \cup & & \cup & & \cup & & \cup \\
F^1K^0 & \xrightarrow{d} & F^1K^1 & \xrightarrow{d} & F^1K^2 & \xrightarrow{d} & F^1K^3 & \to \cdots & F^1 K^q \\
\cup & & \cup & & \cup & & \cup & & \cup \\
F^2K^0 & \xrightarrow{d} & F^2K^1 & \xrightarrow{d} & F^2K^2 & \xrightarrow{d} & F^2K^3 & \to \cdots & F^2K^q
\end{array}$$

Let $F^1 Z^q = \ker d, \quad d : F^1K^q \longrightarrow F^1K^{q+1}$
$F^1 B^q = \operatorname{im} d \quad d : F^1K^{q-1} \longrightarrow F^1K^q.$

Define $F^1H^q(K^*) = \dfrac{F^1Z^q}{F^1B^q}$, similarly,

$$F^{1+1}H^q(K^*) = \frac{F^1 Z^q}{F^1 B^q}.$$

$$\Rightarrow \quad F^{1+1}H^q(K^*) \longrightarrow F^1H^q(K^*) \text{ is well-defined}$$
$$\overset{\psi}{x} + F^{1+1}B^q \longmapsto x + F^1B^q$$

since, for any $y \in F^{1+1}B^q$, $y = d\alpha^{q-1}$, $\alpha^{q-1} \in F^{1+1}K^{q-1}$.
$y \in F^2B^q = \operatorname{im} d$ $\quad$ $F^2H^q(K^*) \longrightarrow H^q(K^*)$
$\cap$
F^1B^q, $(\because F^{1+1}K^q \subset F^1K^q)$. $\lrcorner$

The associated graded cohomology is