

$$\begin{array}{ccccc}
P_{\bullet}(K) : & & \cdot & \xrightarrow{\quad\quad\quad} & P_0(K) & \dashrightarrow & K \\
\downarrow P_{\bullet}(\phi) & & \downarrow & & \downarrow \phi_0 & & \downarrow \phi \\
P_{\bullet}(X) : & & P_1(X) & \xrightarrow{\quad d \quad} & P_0(X) & \dashrightarrow & X \\
\downarrow & & \downarrow \begin{pmatrix} 0 \\ 1 \end{pmatrix} & & \downarrow 1 & & \downarrow \\
\text{Cone}(P_{\bullet}(\phi)) & & P_0(K) \oplus P_1(X) & \xrightarrow{\quad (\phi_0, d) \quad} & P_0(X) & \dashrightarrow & Y
\end{array}$$