

$$\begin{array}{ccccccccccccccc}
X & \xrightarrow{f} & Y & \xrightarrow{q(f)} & \overline{C}_f & \xrightarrow{q^2(f)} & \overline{C}_{q(f)} & \xrightarrow{q^3(f)} & \overline{C}_{q^2(f)} & \xrightarrow{q^4(f)} & \overline{C}_{q^3(f)} & \xrightarrow{q^5(f)} & \overline{C}_{q^4(f)} & \longrightarrow & \dots \\
\parallel \downarrow & & \parallel \downarrow & & \parallel \downarrow & & \wr \downarrow & & \wr \downarrow & & \wr \downarrow & & \wr \downarrow & & \\
X & \xrightarrow{f} & Y & \xrightarrow{q(f)} & \overline{C}_f & \xrightarrow{g} & \Sigma X & \xrightarrow{\Sigma f} & \Sigma Y & \xrightarrow{\Sigma q(f)} & \Sigma \overline{C}_f & \xrightarrow{\Sigma g} & \Sigma^2 X & \longrightarrow & \dots
\end{array}$$