$$\begin{array}{ccccccccc}
\cdots & \longrightarrow & 0 & \longrightarrow & P^i & \xrightarrow{\phi^i} & P^{i+1} & \xrightarrow{\phi^{i+1}} & \cdots \\
& & \downarrow & & \downarrow & & \downarrow & & \\
\cdots & \longrightarrow & C^{i-1} & \longrightarrow & C^i & \longrightarrow & C^{i+1} & \longrightarrow & \cdots
\end{array}$$