

$$\begin{array}{ccccccc}
X & \xrightarrow{f} & Y & \xrightarrow{i(f)} & \mathrm{Cone}(f) & \xrightarrow{p(f)} & X[1] \\
\parallel & & \downarrow g & & \downarrow g_* & & \parallel \\
X & \xrightarrow{g \circ f} & Z & \xrightarrow{i(g \circ f)} & \mathrm{Cone}(g \circ f) & \xrightarrow{p(g \circ f)} & X[1] \\
& & \downarrow i(g) & & \downarrow i(g_*) & & \downarrow f[1] \\
& & \mathrm{Cone}(g) & \overset{\sim}{\dashrightarrow} & \mathrm{Cone}(g_*) & \xrightarrow{p(g)} & Y[1] \\
& & \downarrow p(g) & & \downarrow p(g_*) & & \\
& & Y[1] & \xrightarrow{i(f)[1]} & \mathrm{Cone}(f)[1] & &
\end{array}$$

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