

$$\begin{array}{ccccccccc}
H_k(A) & \longrightarrow & H_k(X) & \longrightarrow & H_k(X, A) & \longrightarrow & H_{k-1}(A) & \longrightarrow & H_{k-1}(X) \\
\parallel & & \parallel & & \downarrow & & \parallel & & \parallel \\
H_k(B) & \longrightarrow & H_k(Y) & \longrightarrow & H_k(Y, B) & \longrightarrow & H_{k-1}(B) & \longrightarrow & H_{k-1}(Y)
\end{array}$$