

$$\begin{array}{ccc}
 h_1^*(Y) & \xrightarrow{f^*} & h_1^*(X) \\
 T_Y \downarrow \cong & & \cong \downarrow T_X \\
 h_2^*(Y) & \xrightarrow{f^*} & h_2^*(X)
 \end{array}$$