

$$\begin{array}{ccc}
 \pi_1(X, x_0) & \xrightarrow{f_*} & \pi_1(Y, f(x_0)) \\
 \downarrow \scriptstyle S_\tau \quad \cong & & \cong \quad \downarrow \scriptstyle S_{f\tau} \\
 \pi_1(X, x_1) & \xrightarrow{f_*} & \pi_1(Y, f(x_1))
 \end{array}$$