

## 5.2 Chiral Sing. Fibers

Def.  $\mathcal{F}$ :  $C^0$  equiv. class of

a fiber of  $f: M \rightarrow N \ni y$   
 $\uparrow$   
orientable

- $\mathcal{F}$  is achiral

$$\Leftrightarrow \begin{array}{ccc} (f^{-1}(U), f^{-1}(y)) & \xrightarrow{\exists \tilde{\varphi}} & (f^{-1}(U), f^{-1}(y)) \\ f \downarrow & \exists \varphi^2 & \downarrow f \\ (U, y) & \xrightarrow{\exists \varphi} & (U, y) \end{array}$$

$\tilde{\varphi}, \varphi$ : homeo.

s.t.  $\left\{ \begin{array}{l} \tilde{\varphi} \text{ reverses the ori.} \\ \varphi|_{\mathcal{F}(f) \cap U} \text{ preserves the ori.} \end{array} \right.$

- $\mathcal{F}$  is chiral

$\Leftrightarrow$  NOT achiral