

$$\begin{array}{ccc}
T_p \mathcal{M} & \xrightarrow{h_*} & T_{h(p)} \mathcal{N} \\
\downarrow \ell_p^\phi & & \downarrow \ell_{h(p)}^\psi \\
\mathbb{R}^m & \longrightarrow & \mathbb{R}^n
\end{array}$$