

$$\begin{array}{lcl}
\textit{lift}_{X,Y} : (X \rightarrow Y) & \longrightarrow & (X \rightarrow Y \times \mathbb{R}_{\geq 0}) \\
f & \longmapsto & \left\{ \begin{array}{lcl} \textit{lift}_{X,Y} f : X & \longrightarrow & Y \times \mathbb{R}_{\geq 0} \\ & & x \longmapsto \langle x, 0 \rangle \end{array} \right.
\end{array}$$