

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