

$$\begin{array}{ccc}
\mathbf{D}(J \times K^{\mathrm{oo}} \times L^{\mathrm{oo}}) & \xrightarrow{\Sigma_K^*} & \mathbf{D}(J \times \mathrm{Tw}(K) \times L^{\mathrm{oo}}) \\
\downarrow \Sigma_L^* & & \downarrow \mathrm{pr}_!^K \\
\mathbf{D}(J \times K^{\mathrm{oo}} \times \mathrm{Tw}(L)) & \swarrow \alpha & \mathbf{D}(J \times L^{\mathrm{oo}}) \\
\downarrow \mathrm{pr}_!^L & & \downarrow \Sigma_L^* \\
\mathbf{D}(J \times K^{\mathrm{oo}}) & \swarrow \beta & \mathbf{D}(J \times \mathrm{Tw}(L)) \\
\downarrow \Sigma_K^* & & \downarrow \mathrm{pr}_!^L \\
\mathbf{D}(J \times \mathrm{Tw}(K)) & \xrightarrow{\mathrm{pr}_!^K} & \mathbf{D}(J)
\end{array}$$

$\Sigma_{K \times L}$ (diagonal arrow from top-left to bottom-right)