

$$\begin{array}{c}
 \mathbf{U}_f \times (\mathbf{X}_f * \mathbf{X}_g) \xrightarrow{\text{id} \times \text{coh}_{f,g}} \mathbf{U}_f \times ((\mathbf{X}_f) \times (\mathbf{X}_g)) \xrightarrow{\text{dyn}_{f,g}} (\mathbf{X}_f) \times (\mathbf{X}_g) \xrightarrow{\text{coh}_{f,g}} (\mathbf{X}_f * \mathbf{X}_g) \\
 \text{id} \times \text{coh}_{f,g} \qquad \text{dyn}_{f,g} \qquad \text{coh}_{f,g}
 \end{array}$$