

$$\begin{array}{ccc}
 \mathbf{U}_f \times (\mathbf{X}_f * \mathbf{X}_g * \mathbf{X}_h) & \xrightarrow{\text{dyn}_{(f \circ (g \circ h))}} & (\mathbf{X}_f * \mathbf{X}_g * \mathbf{X}_h) \\
 \uparrow \text{id}_{\mathbf{U}_f} \times (\text{coh}_{(f \circ g) \circ h} \times \text{id}_{(\mathbf{X}_h)}) & & \uparrow \text{coh}_{(f \circ g) \circ h} \\
 \mathbf{U}_f \times ((\mathbf{X}_f * \mathbf{X}_g) \times (\mathbf{X}_h)) & & (\mathbf{X}_f * \mathbf{X}_g) \times (\mathbf{X}_h) \\
 \uparrow \text{id}_{\mathbf{U}_f} \times (\text{coh}_{f \circ g} \times \text{id}_{(\mathbf{X}_h)}) & & \uparrow \text{coh}_{f \circ g} \times \text{id}_{(\mathbf{X}_h)} \\
 \mathbf{U}_f \times (((\mathbf{X}_f) \times (\mathbf{X}_g)) \times (\mathbf{X}_h)) & \xrightarrow{\text{dyn}''_{(f \circ g) \circ h}} & ((\mathbf{X}_f) \times (\mathbf{X}_g)) \times (\mathbf{X}_h)
 \end{array}$$