

$$\begin{array}{ccc}
 (S(\mathbf{A}) \times S(\mathbf{B})) \times S(\mathbf{C}) & \xrightarrow{\alpha} & S(\mathbf{A}) \times (S(\mathbf{B}) \times S(\mathbf{C})) \\
 \text{coh}_{\mathbf{A},\mathbf{B}} \times \text{Id}_{S(\mathbf{C})} \downarrow & & \downarrow \text{Id}_{S(\mathbf{A})} \times \text{coh}_{\mathbf{B},\mathbf{C}} \\
 S(\mathbf{A} * \mathbf{B}) \times S(\mathbf{C}) & & S(\mathbf{A}) \times S(\mathbf{B} * \mathbf{C}) \\
 \text{coh}_{\mathbf{A} * \mathbf{B},\mathbf{C}} \downarrow & & \downarrow \text{coh}_{\mathbf{A},\mathbf{B} * \mathbf{C}} \\
 S(\mathbf{A} * \mathbf{B} * \mathbf{C}) & \xlongequal{\quad} & S(\mathbf{A} * \mathbf{B} * \mathbf{C})
 \end{array}$$