Enrique: \( y, y^* \in \mathbb{E} \quad D \mapsto \text{U}(\mathbb{E}) - \text{mod}, \quad D^2 \mapsto \text{U}(\mathbb{E}) - \text{mod} \)

\[ M = \text{U}(\mathbb{E})/\text{U}(\mathbb{E})y^* \]

co-commutative &

co-associative in both \( D \) & \( D^2 \)

\( F : D \rightarrow \text{vect} \quad F(x) = Xy = XyX \)

\( F(xy) \mapsto F(x) \circ F(y) \) “obvious”

\( F \) takes \( M \) to \( F(M) \), which is also co-commutative and co-associative.

\[ F(xy)F(z) \]

\[ F(xy)z \]

\[ F(x(y)z) \]

\[ F(x)F(y)F(z) \]

\[ F(x)(F(y))F(z) \]

\[ F(xy) - F(x)F(y) \]

\[ F(x)F(y) \]

\[ F(x)F(y)F(z) \]

\[ F(x)F(y)F(z) \]

\( M \otimes M \) is a \( \alpha \)-coalgebra, non-co-commutative by

\[ \alpha_h (y) = F(M \otimes M) \]

\[ F(M^2) \circ F(M^2) \leftrightarrow F(M^2 M^2) \]

\[ F(M^3) \]

\[ F(M^3) \]

Associtivity follows from a big diagram