

Definition. A quantum permutation algebra (QPA) is a Hopf Algebra generated by the coeffs of $\alpha = (\alpha_{ij}) \in M_{n \times n}(H)$ s.t.

1. α is a permutation matrix; $\left(\begin{array}{l} H \text{ is} \\ \text{a Hopf} \\ \text{algebra} \end{array} \right)$

2. $\Delta(\alpha) = \dots$