Irreducible corepresentations of $A_o(Q)$:

$u_k \in B(H_k) \otimes A_o(Q)$, $k \in \mathbb{N}$

Quantum dimension of H_k : $m_k \in \mathbb{R}_+^*$

Lemma *We consider the following irreducible subspaces of* $L = H_1 \otimes H_k \otimes H_{k'}$ *:*

– $G_1 \simeq H_{k+k'-1} \subset H_{k-1} \otimes H_{k'} \subset L$*,*

– $G_2 \simeq H_{k+k'-1} \subset H_1 \otimes H_{k+k'} \subset L$*.*

The norm of the orthogonal projection from G_1 *onto* G_2 *equals*

$$\sqrt{1 - \frac{m_{k'-1}}{m_{k+k'-1} m_k}}.$$

Lemma *Let* $a \in S$ *be a coefficient of* u_1*. There exists* $C_a > 0$ *such that* $\forall\ k, k'$

$$||[a \otimes 1, p_{\star +}](p_k \otimes p_{k'})|| \leq C_a \sqrt{\frac{m_{k'-1}}{m_{k+k'-1} m_k}}.$$

NB : $m_{k+1} - m_1 m_k + m_{k-1} = 0$ and
$m_1 = \mathrm{Tr}\ Q^* Q = \mathrm{Tr}\ (Q^* Q)^{-1}$.