$$L^2(\mathbb{R}^2) \longrightarrow \cdots \longrightarrow V_{j-1} \otimes V_{j-1} \longrightarrow V_j \otimes V_j \longrightarrow V_{j+1} \otimes V_{j+1} \longrightarrow \cdots \longrightarrow \{0\}$$

$$\searrow \qquad\qquad \searrow \qquad\qquad \searrow \qquad\qquad \searrow$$

$$W_{j-1}^{(2)} \qquad\qquad W_j^{(2)} \qquad\qquad W_{j+1}^{(2)}$$