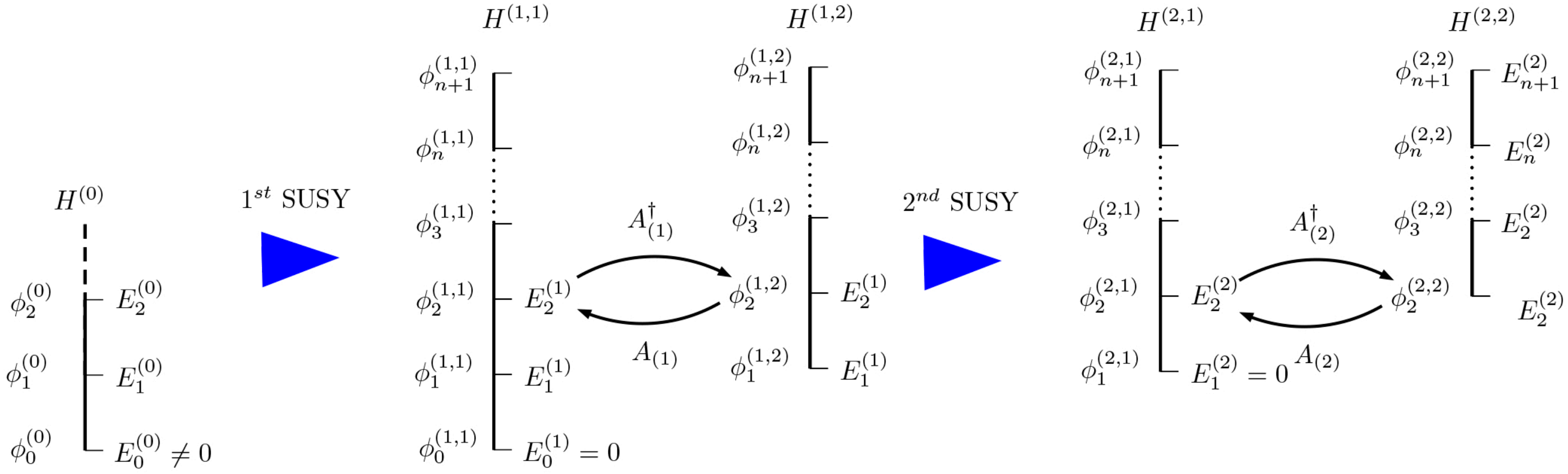

$$\phi_n^{(0)}(x) = Q_0^n\left(i\frac{A\sin\left(\frac{s_1}{2a}x\right) - B\cos\left(\frac{s_1}{2a}x\right)}{A\cos\left(\frac{s_1}{2a}x\right) + B\sin\left(\frac{s_1}{2a}x\right)}\right)$$

$$\phi_n^{(1,2)}(x) = Q_1^n\left(i\frac{A\sin\left(\frac{s_1}{2a}x\right) - B\cos\left(\frac{s_1}{2a}x\right)}{A\cos\left(\frac{s_1}{2a}x\right) + B\sin\left(\frac{s_1}{2a}x\right)}\right)$$

$$\phi_n^{(2,2)}(x) = Q_2^n\left(i\frac{A\sin\left(\frac{s_1}{2a}x\right) - B\cos\left(\frac{s_1}{2a}x\right)}{A\cos\left(\frac{s_1}{2a}x\right) + B\sin\left(\frac{s_1}{2a}x\right)}\right)$$