

$$\begin{array}{c}
 H^{(0)} \\
 \vdots \\
 \phi_2^{(0)} \text{ --- } E_2^{(0)} \\
 \phi_1^{(0)} \text{ --- } E_1^{(0)} \\
 \phi_0^{(0)} \text{ --- } E_0^{(0)} \neq 0
 \end{array}
 \quad \xrightarrow{\text{1}^{st} \text{ SUSY}}$$

$$\begin{array}{ccc}
 H^{(1,1)} & & H^{(1,2)} \\
 \vdots & & \vdots \\
 \phi_{n+1}^{(1,1)} & & \phi_{n+1}^{(1,2)} \\
 \vdots & & \vdots \\
 \phi_n^{(1,1)} & & \phi_n^{(1,2)} \\
 \vdots & & \vdots \\
 \phi_3^{(1,1)} & & \phi_3^{(1,2)} \\
 \phi_2^{(1,1)} \text{ --- } E_2^{(1)} & \xleftrightarrow{A_{(1)}^\dagger} & \phi_2^{(1,2)} \text{ --- } E_2^{(1)} \\
 & \xleftarrow{A_{(1)}} & \\
 \phi_1^{(1,1)} \text{ --- } E_1^{(1)} & & \phi_1^{(1,2)} \text{ --- } E_1^{(1)} \\
 \vdots & & \vdots \\
 \phi_0^{(1,1)} \text{ --- } E_0^{(1)} = 0 & &
 \end{array}
 \quad \xrightarrow{\text{2}^{nd} \text{ SUSY}}$$

$$\begin{array}{ccc}
 H^{(2,1)} & & H^{(2,2)} \\
 \vdots & & \vdots \\
 \phi_{n+1}^{(2,1)} & & \phi_{n+1}^{(2,2)} \text{ --- } E_{n+1}^{(2)} \\
 \vdots & & \vdots \\
 \phi_n^{(2,1)} & & \phi_n^{(2,2)} \text{ --- } E_n^{(2)} \\
 \vdots & & \vdots \\
 \phi_3^{(2,1)} & & \phi_3^{(2,2)} \text{ --- } E_2^{(2)} \\
 \phi_2^{(2,1)} \text{ --- } E_2^{(2)} & \xleftrightarrow{A_{(2)}^\dagger} & \phi_2^{(2,2)} \text{ --- } E_2^{(2)} \\
 & \xleftarrow{A_{(2)}} & \\
 \phi_1^{(2,1)} \text{ --- } E_1^{(2)} = 0 & &
 \end{array}$$

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

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

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