

$$\begin{pmatrix} \ddots & \vdots & \vdots & \vdots & \ddots \\ \cdots & \hat{H}_0 - \hbar\omega & \hat{H}_1 & \hat{H}_{-2} & \cdots \\ \cdots & \hat{H}_1 & \hat{H}_0 & \hat{H}_{-1} & \cdots \\ \cdots & \hat{H}_2 & \hat{H}_1 & \hat{H}_0 + \hbar\omega & \cdots \\ \ddots & \vdots & \vdots & \vdots & \ddots \end{pmatrix}$$