$$\Phi(i+1,j) + \Phi(i-1,j) + \Phi(i,j+1) + \Phi(i,j-1) - (4 - h^2 k^2)\Phi(i,j) = 0$$

$\rightarrow$ Eigenvalue problem, lossless waveguide.
Consider Dirichlet condition, Neumann condition.