



If we can calculate the correlation length with different disorder strength. We can find that if the energy of the eigenstate is fixed, the correlation length scales as  $\xi = \alpha \cdot W^2$ .

### 3. Time propagation

Dynamical process can also support this problem. Here, we use the quantum dynamics to investigate the time evolution of an wave packet.

Starting with initial state as  $\delta$  function, we can