

格子编号

Table [1] = |  
 Table [10] = |  
 Table [23] = |  
 Table [32] = |

⋮

Table [86] = |  
 Table [89] = |  
 Table [97] = |  
 Table [98] = |

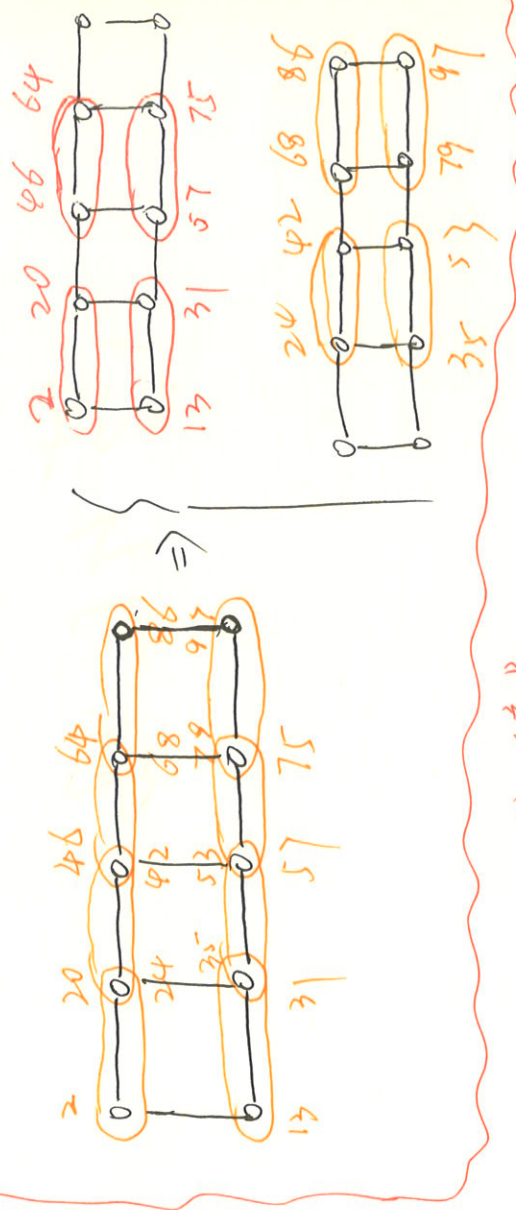
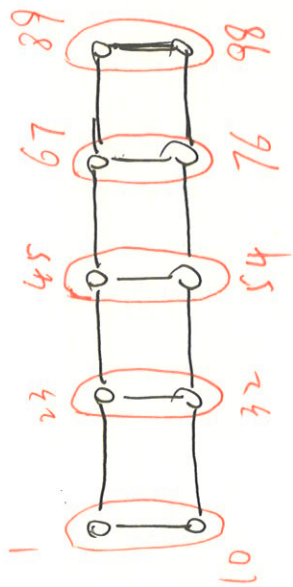
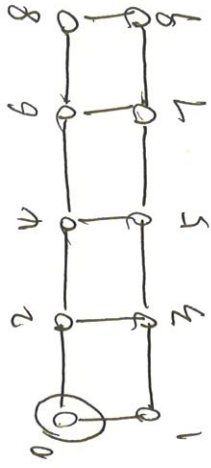


Table 编号



$$\{i=0, \dots\} \{j=0, \dots\} \{l=1, 2, 3, 4, 5, 6, 7, 8, 9\}$$

$$\text{Number} = 10 \times 0 = 0$$

$$\text{Number} + l = 10 \times 0 + 1 = 1 \Rightarrow \text{Table}[10 \times 0 + 1]$$

$$= \text{Table}[1] = 1$$

$i$ : sys.block 编号

$j$ : 块内格点的编号

计算  $\text{Number} = N \times j + l$ :

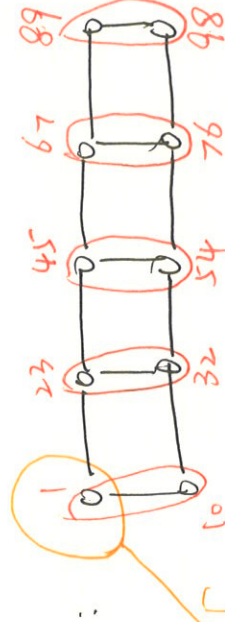
块内的格点, 沿着链的方向长 "bond",

判断该 bond 连接的格点是否在 Table 内.

例如:  $\frac{10 \times 0 + 1}{}$ : 代表格点 0, 1 之间的 bond,

如果有 bond,  $\text{Table}[10 \times 0 + 1] = 1$ .

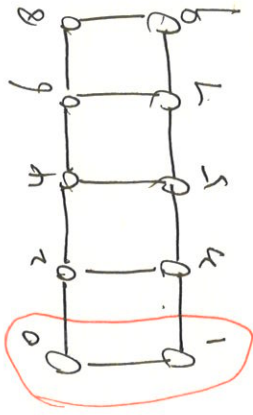
查看 Table 编号:



对应编号

$$10 \times 0 + 1$$

SYS



系统块  
编号

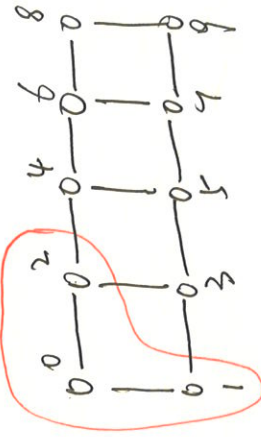
$\{i=1\} \{j=0, j=1\} \{l=2, 3, 4, 5, 6, 7, 8, 9\}$

$j=0 \begin{cases} 10 \times 0 + 2 = 2 \\ \underline{10 \times 0 + 3 = 3} \end{cases} \quad (Table[2] = 1) \rightarrow (break)$

$j=1 \begin{cases} 10 \times 1 + 2 = 12 \\ 10 \times 1 + 3 = 13 \end{cases} \quad (Table[3] = 1) \rightarrow (break)$

2x5 break

SYS



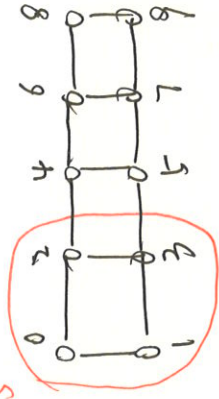
$\{i=2\} \{j=0, 1, 2\} \{l=3, 4, 5, 6, 7, 8, 9\}$

$j=0, \begin{cases} 10 \times 0 + 3 = 3 \\ 10 \times 0 + 4 = 4 \\ 10 \times 0 + 5 = 5 \\ 10 \times 0 + 6 = 6 \\ 10 \times 0 + 7 = 7 \\ 10 \times 0 + 8 = 8 \\ 10 \times 0 + 9 = 9 \end{cases}$   
 $j=1, 10 \times 1 + 3 = 13 \quad (Table[13] = 1) \rightarrow (break)$   
 $j=2, 10 \times 2 + 3 = 23 \quad (Table[23] = 1) \rightarrow (break)$

代表: 当吸格子进来  
的时候, 格子!

2x break  $\Rightarrow$  Table-sys-site:  $i=2, index \begin{cases} 1 \\ 2, j \end{cases} \begin{cases} 1 \\ 2 \end{cases}$   
 和格子 2 5 格子 3 都  
有相互作用 (1,2) (2,3)

sys



$$\{i=3\} \{j=0, 1, 2, 3\} \{l=4, 5, 6, 7, 8, 9\}$$

$$j=0, 10 \times 0 + 4 = 4 \quad j=1, 10 \times 1 + 4 = 14$$

$$10 \times 0 + 5 = 5 \quad 10 \times 1 + 5 = 15$$

$$10 \times 0 + 6 = 6 \quad 10 \times 1 + 6 = 16$$

$$10 \times 0 + 7 = 7 \quad 10 \times 1 + 7 = 17$$

$$10 \times 0 + 8 = 8 \quad 10 \times 1 + 8 = 18$$

$$10 \times 0 + 9 = 9 \quad 10 \times 1 + 9 = 19$$

$$j=2, 10 \times 2 + 4 = 24, (Table[24] = 1) \rightarrow (break)$$

~~$$10 \times 2 + 5 = 25$$~~
~~$$10 \times 2 + 6 = 26$$~~
~~$$10 \times 2 + 7 = 27$$~~
~~$$10 \times 2 + 8 = 28$$~~

$$j=3, 10 \times 3 + 4 = 34$$

$$10 \times 3 + 5 = 35 (Table[35] = 1) \rightarrow (break)$$

$$\Rightarrow Table-sys-site: i=3, index \begin{cases} 1 \\ 2 \end{cases}, j = \begin{cases} 2 \\ 3 \end{cases}$$



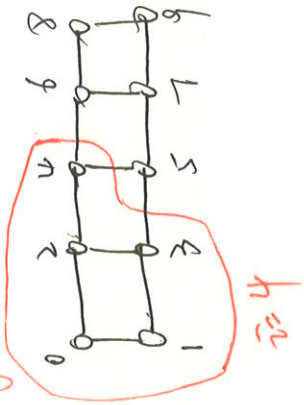
(2↑ break)

系统与环境无相互作用

bond op (2, 4)

(3, 5)

sys



$\{i=4\} \{j=0, 1, 2, 3, 4\} \{l=5, 6, 7, 8, 9\}$

$j=0, \quad 10 \times 0 + 5 = 5$   
 $10 \times 0 + 6 = 16$   
 $10 \times 0 + 7 = 17$   
 $10 \times 0 + 8 = 18$   
 $10 \times 0 + 9 = 19$

$j=1, \quad 10 \times 1 + 5 = 15$   
 $10 \times 1 + 6 = 16$   
 $10 \times 1 + 7 = 17$   
 $10 \times 1 + 8 = 18$   
 $10 \times 1 + 9 = 19$

$j=2, \quad 10 \times 2 + 5 = 25$   
 $10 \times 2 + 6 = 26$   
 $10 \times 2 + 7 = 27$   
 $10 \times 2 + 8 = 28$   
 $10 \times 2 + 9 = 29$

$j=3, \quad 10 \times 3 + 5 = 35, \text{ Table}[35]=1$   
 $\rightarrow (\text{break})$

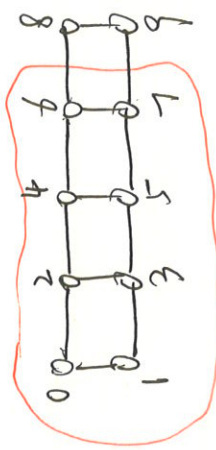
$j=4, \quad 10 \times 4 + 5 = 45, \text{ Table}[45]=1$   
 $\rightarrow (\text{break})$

$\Rightarrow \text{Table-sys-size: } i=4, \text{ index } \{2, 3, 4, 5, 6, 7, 8, 9\}$

系统与环境互相作用  
 bond of (3, 5)  
 (4, 5)



sys



i=7

$$\{ \bar{i} = 0 \} \{ \bar{j} = 0, 1 \}$$

$$\{ \bar{i} = 7 \} \{ \bar{j} = 0, 1, 2, 3, 4, 5, 6, 7 \} \{ \bar{l} = 8, 9 \}$$

$$\bar{j} = 0, \quad 10 \times 0 + 8 = 08$$

$$10 \times 0 + 9 = 09$$

$$\bar{j} = 1, \quad 10 \times 1 + 8 = 18$$

$$10 \times 1 + 9 = 19$$

$$\bar{j} = 2, \quad 10 \times 2 + 8 = 28$$

$$10 \times 2 + 9 = 29$$

$$\bar{j} = 3, \quad 10 \times 3 + 8 = 38$$

$$10 \times 3 + 9 = 39$$

$$\bar{j} = 4, \quad 10 \times 4 + 8 = 48$$

$$10 \times 4 + 9 = 49$$

$$\bar{j} = 5, \quad 10 \times 5 + 8 = 58$$

$$10 \times 5 + 9 = 59$$

$$\bar{j} = 6 : \quad 10 \times 6 + 8 = 68$$

$$\text{Table}[10 \times 6 + 8] = 1 \rightarrow (\text{break})$$

$$\bar{j} = 7 \quad 10 \times 7 + 8 = 78$$

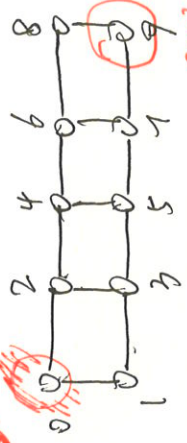
$$10 \times 7 + 9 = 79$$

$$\text{Table}[79] = 1 \rightarrow (\text{break})$$

$\Rightarrow$  Table-sys-site :  $\bar{i} = 7, \quad \text{index} \begin{cases} 1 \\ 2 \end{cases}$       系统与环境相互作用

$\bar{j} = \begin{cases} 6 \\ 7 \end{cases}$       bond to (6, 8)  
(7, 9)

env\_block, number of sites whose operators need to be stored



$$\{i=0\} \{j=0\} \{l=0,1,2,3,4,5,6,7,8\}$$

$$j=0, \quad 10(10-0-1) + 0 = 90$$

$$10(10-0-1) + 1 = 91$$

$$10(10-0-1) + 2 = 92$$

$$10(10-0-1) + 3 = 93$$

$$10(10-0-1) + 4 = 94$$

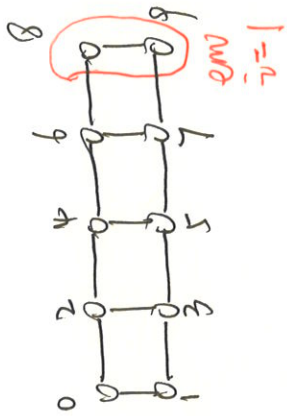
$$10(10-0-1) + 5 = 95$$

$$10(10-0-1) + 6 = 96$$

$$10(10-0-1) + 7 = 97$$

$$10(10-0-1) + 8 = 98$$

Table [97] = 1,  $\rightarrow$  (break)



$$\{ \bar{v} = 1 \} \{ j = 0, 1 \} \cdot \{ d = 0, 1, 2, 3, 4, 5, 6, 7 \}$$

$$j=0, 10(10-0-1) + 0 = 90 \quad (\text{判断格点 } 9 \text{ 和格点 } 0 \text{ 是否相邻})$$

$$10(10-0-1) + 1 = 91 \quad (\text{判断格点 } 9 \text{ 和格点 } 1 \text{ 是否相邻})$$

$$10(10-0-1) + 2 = 92$$

$$10(10-0-1) + 3 = 93$$

$$10(10-0-1) + 4 = 94$$

$$10(10-0-1) + 5 = 95$$

$$10(10-0-1) + 6 = 96$$

$$10(10-0-1) + 7 = 97 \quad \text{Table}[97] = 1 \rightarrow \text{break}$$

$$j=1, 10(10-1-1) + 0 = 80$$

$$10(10-1-1) + 1 = 81$$

$$10(10-1-1) + 2 = 82$$

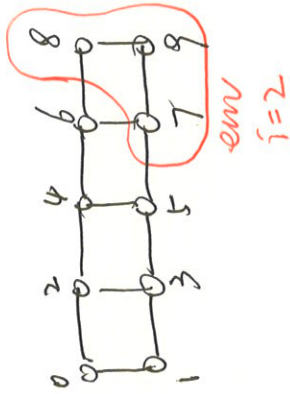
$$10(10-1-1) + 3 = 83$$

$$10(10-1-1) + 4 = 84$$

$$10(10-1-1) + 5 = 85$$

$$10(10-1-1) + 6 = 86 \quad \text{Table}[86] = 1, \rightarrow \text{break}$$



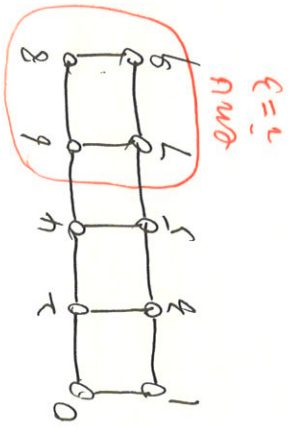


$\{\bar{i}=2\} \{j=0, 1, 2\} \{l=0, 1, 2, 3, 4, 5, 6\}$

$$\begin{aligned} \bar{j}=0, & \quad 10(10-0-1)+0=90 \\ & \quad 10(10-0-1)+1=91 \\ & \quad 10(10-0-1)+2=92 \\ & \quad 10(10-0-1)+3=93 \\ & \quad 10(10-0-1)+4=94 \\ & \quad 10(10-0-1)+5=95 \\ & \quad 10(10-0-1)+6=96. \end{aligned}$$

$$\begin{aligned} \bar{j}=1, & \quad 10(10-1-1)+0=80 \\ & \quad 10(10-1-1)+1=81 \\ & \quad 10(10-1-1)+2=82 \\ & \quad 10(10-1-1)+3=83 \\ & \quad 10(10-1-1)+4=84 \\ & \quad 10(10-1-1)+5=85 \\ & \quad 10(10-1-1)+6=86 \rightarrow \text{Table}[86]=1 \rightarrow (\text{break}) \end{aligned}$$

$$\begin{aligned} \bar{j}=2, & \quad 10(10-2-1)+0=70 \\ & \quad 10(10-2-1)+1=71 \\ & \quad 10(10-2-1)+2=72 \\ & \quad 10(10-2-1)+3=73 \\ & \quad 10(10-2-1)+4=74 \\ & \quad 10(10-2-1)+5=75 \rightarrow \text{Table}[86]=1 \rightarrow (\text{break}) \end{aligned}$$



$\{i=3\} \{j=0,1,2,3\} \{d=0,1,2,3,4,5\}$

$j=3, 10 \times (10-3-1) + 0 = 60$   
 $10 \times (10-3-1) + 1 = 61$   
 $10 \times (10-3-1) + 2 = 62$   
 $10 \times (10-3-1) + 3 = 63$   
 $10 \times (10-3-1) + 4 = 64$

$\Downarrow \text{Table}[64] = 1$

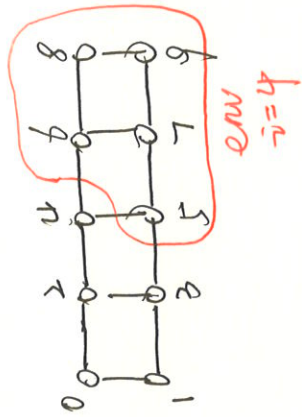
$\Downarrow$  (break)

$j=0, 10 \times (10-0-1) + 0 = 90$   
 $10 \times (10-0-1) + 1 = 91$   
 $10 \times (10-0-1) + 2 = 92$   
 $10 \times (10-0-1) + 3 = 93$   
 $10 \times (10-0-1) + 4 = 94$   
 $10 \times (10-0-1) + 5 = 95$

$j=1, 10 \times (10-1-1) + 0 = 80$   
 $10 \times (10-1-1) + 1 = 81$   
 $10 \times (10-1-1) + 2 = 82$   
 $10 \times (10-1-1) + 3 = 83$   
 $10 \times (10-1-1) + 4 = 84$   
 $10 \times (10-1-1) + 5 = 85$

$j=2, 10 \times (10-2-1) + 0 = 70$   
 $10 \times (10-2-1) + 1 = 71$   
 $10 \times (10-2-1) + 2 = 72$   
 $10 \times (10-2-1) + 3 = 73$   
 $10 \times (10-2-1) + 4 = 74$   
 $10 \times (10-2-1) + 5 = 75$

$\text{Table}[75] = 1, \rightarrow$  (break)



$\{i=4\} \{j=0, 1, 2, 3, 4\} \{l=0, 1, 2, 3, 4\}$

$$\begin{aligned} j=0, & 10 \times (10-0-1) + 0 = 90 \\ & 10 \times (10-0-1) + 1 = 91 \\ & 10 \times (10-0-1) + 2 = 92 \\ & 10 \times (10-0-1) + 3 = 93 \\ & 10 \times (10-0-1) + 4 = 94 \end{aligned}$$

$$\begin{aligned} j=1 & 10 \times (10-1-1) + 0 = 80 \\ & 10 \times (10-1-1) + 1 = 81 \\ & 10 \times (10-1-1) + 2 = 82 \\ & 10 \times (10-1-1) + 3 = 83 \\ & 10 \times (10-1-1) + 4 = 84 \end{aligned}$$

$$\begin{aligned} j=2 & 10 \times (10-2-1) + 0 = 70 \\ & 10 \times (10-2-1) + 1 = 71 \\ & 10 \times (10-2-1) + 2 = 72 \\ & 10 \times (10-2-1) + 3 = 73 \\ & 10 \times (10-2-1) + 4 = 74 \end{aligned}$$

$$\begin{aligned} j=3, & 10 \times (10-3-1) + 0 = 60 \\ & 10 \times (10-3-1) + 1 = 61 \\ & 10 \times (10-3-1) + 2 = 62 \\ & 10 \times (10-3-1) + 3 = 63 \\ & 10 \times (10-3-1) + 4 = 64 \end{aligned}$$

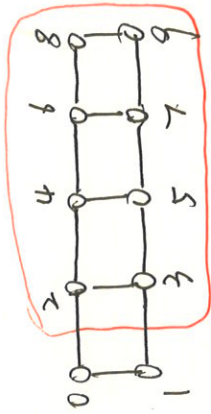
$\Downarrow$   
Table[64] = 1

$\Downarrow$  (break)

$$\begin{aligned} j=4, & 10 \times (10-4-1) + 0 = 50 \\ & 10 \times (10-4-1) + 1 = 51 \\ & 10 \times (10-4-1) + 2 = 52 \\ & 10 \times (10-4-1) + 3 = 53 \end{aligned}$$

$\Downarrow$   
Table[53] = 1

$\Downarrow$  (break)



$$\{\bar{v}=7\} \{j=0,1,2,3,4,5,6,7\} \{l=0,1\}$$

$$\bar{j}=0, \quad 10 \times (10-0-1) + 0 = 90$$

$$10 \times (10-0-1) + 1 = 91$$

$$\bar{j}=1, \quad 10 \times (10-1-1) + 0 = 80$$

$$10 \times (10-1-1) + 1 = 81$$

$$\bar{j}=2, \quad 10 \times (10-2-1) + 0 = 70$$

$$10 \times (10-2-1) + 1 = 71$$

$$\bar{j}=3, \quad 10 \times (10-3-1) + 0 = 60$$

$$10 \times (10-3-1) + 1 = 61$$

$$\bar{j}=4, \quad 10 \times (10-4-1) + 0 = 50$$

$$10 \times (10-4-1) + 1 = 51$$

$$\bar{j}=5, \quad 10 \times (10-5-1) + 0 = 40$$

$$10 \times (10-5-1) + 1 = 41$$

$$\bar{j}=6$$

$$10 \times (10-6-1) + 0 = 30$$

$$10 \times (10-6-1) + 1 = 31$$

$$\rightarrow \text{Table}[\bar{j}] = 1 \Rightarrow \text{break}$$

$$\bar{j}=7$$

$$10 \times (10-7-1) + 0 = 20$$

$$\rightarrow \text{Table}[\bar{j}] = 1 \Rightarrow \text{break}$$