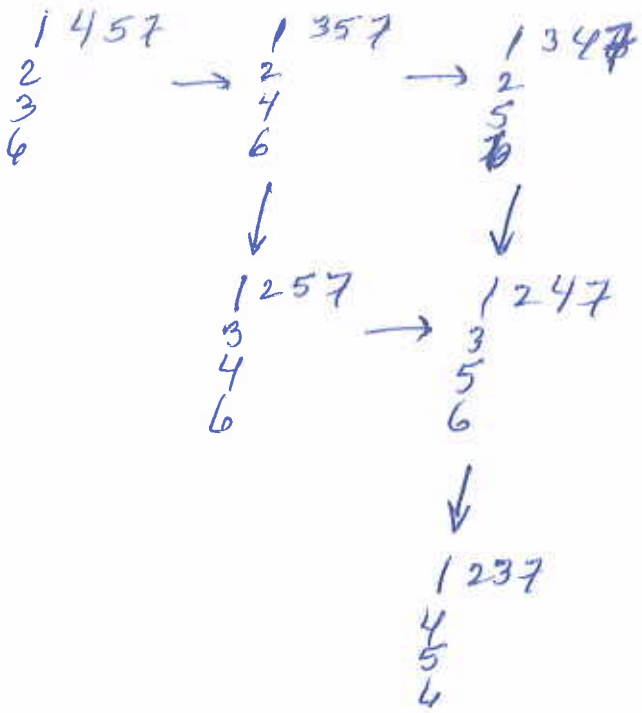


$$B^{\square} \oplus B^{\square} \oplus B^{\square} = B^{\square} + 4B^{\square} + 3B^{\square} + 3B^{\square} + 3B^{\square} + 2B^{\square} + B^{\square}$$

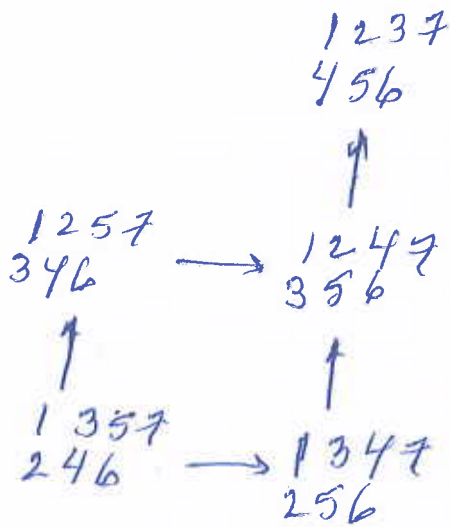


Sn-crystals  
10/11/2017

(9)



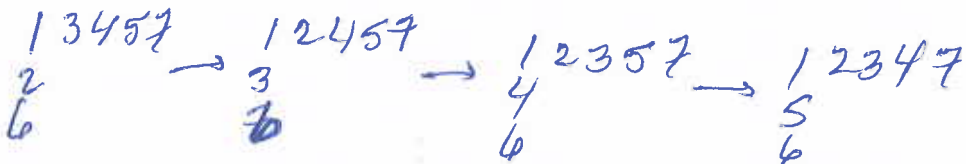
$B_7^A$  at shell 6



$B_7^B$  at shell 6



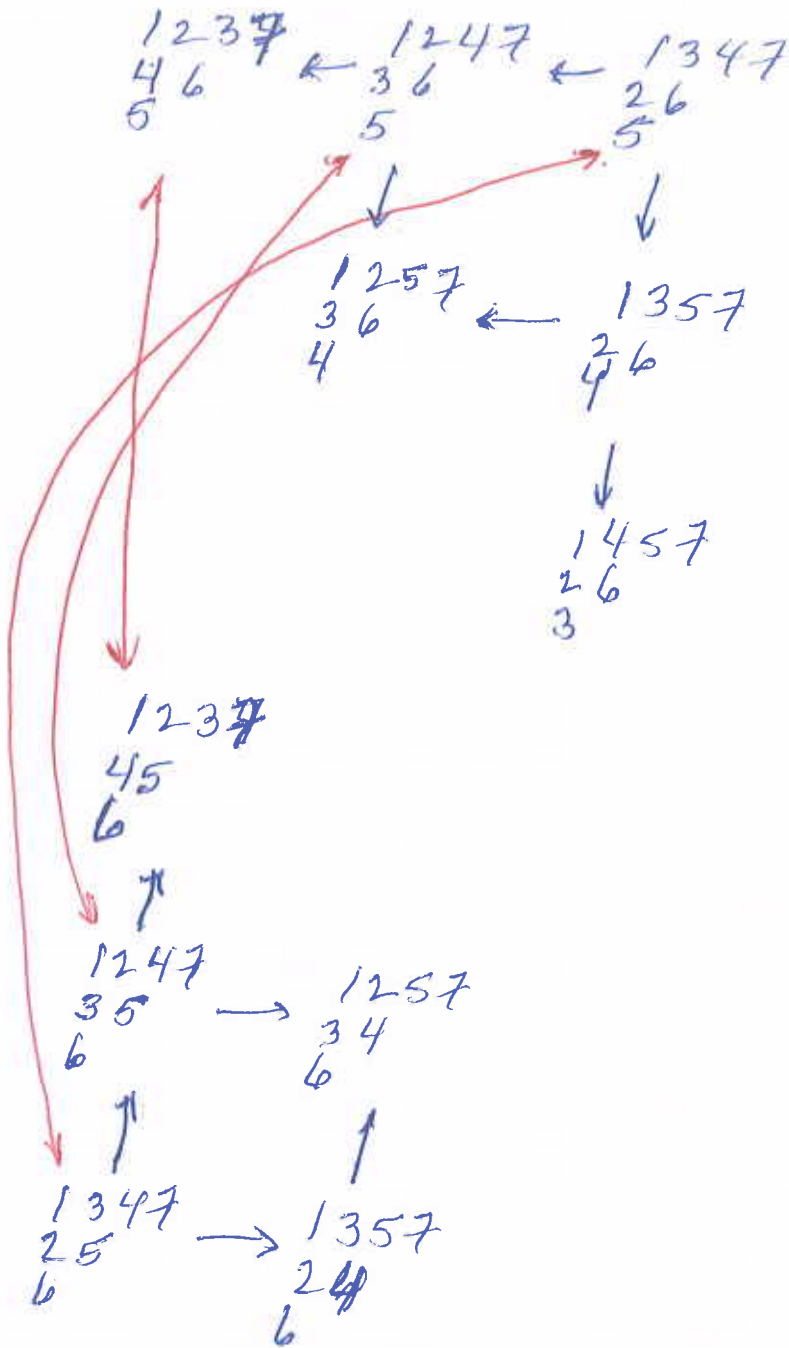
$B_7^C$  at shell 6



$B_7^D$  at shell 6

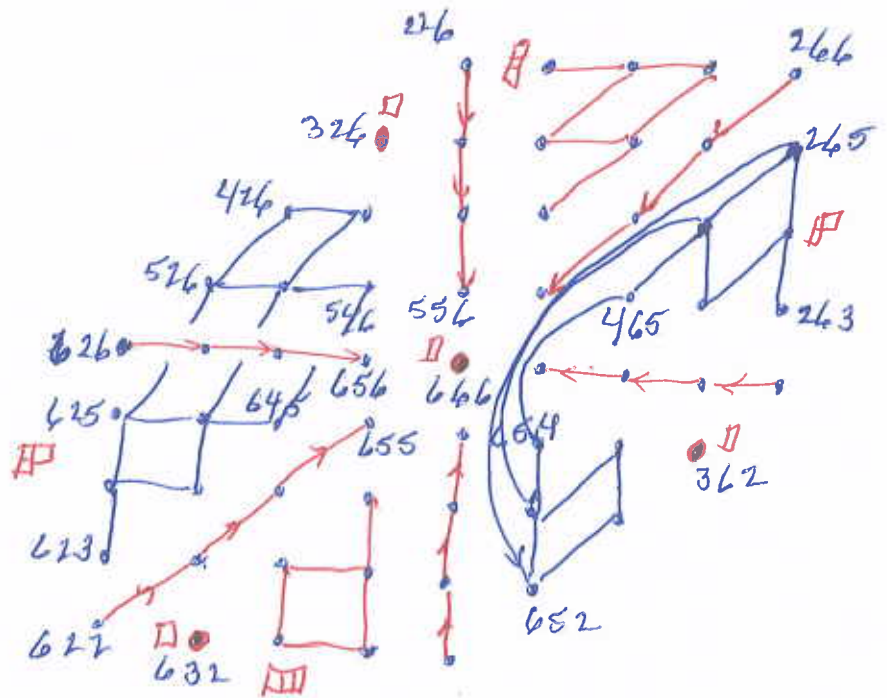
Sncrystals  
10/11/2017.

(8)



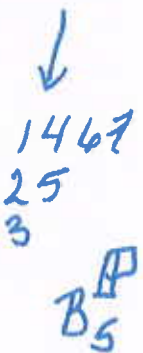
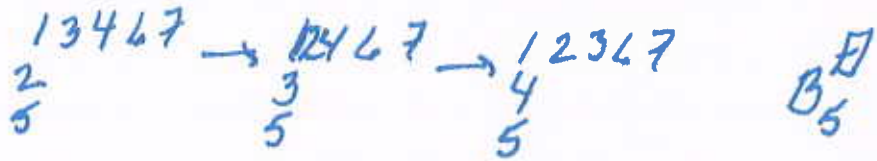
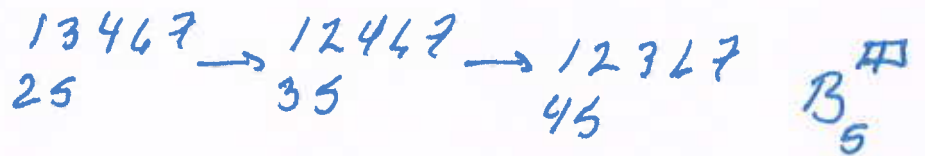
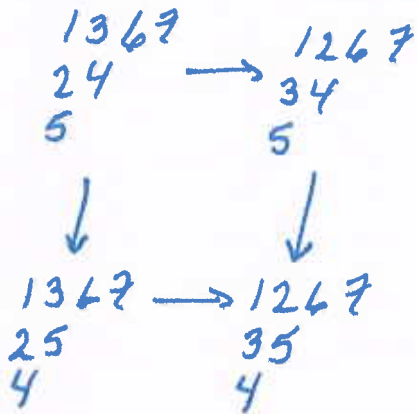
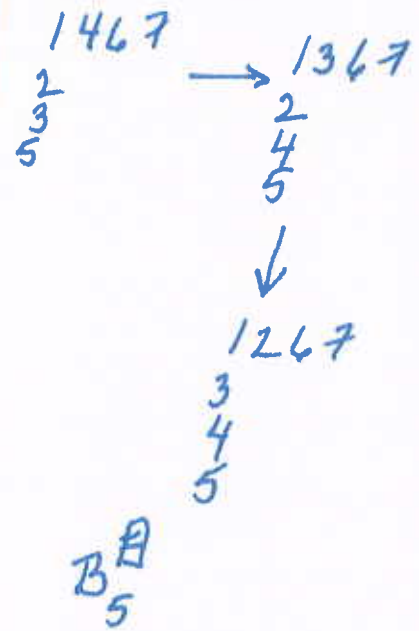
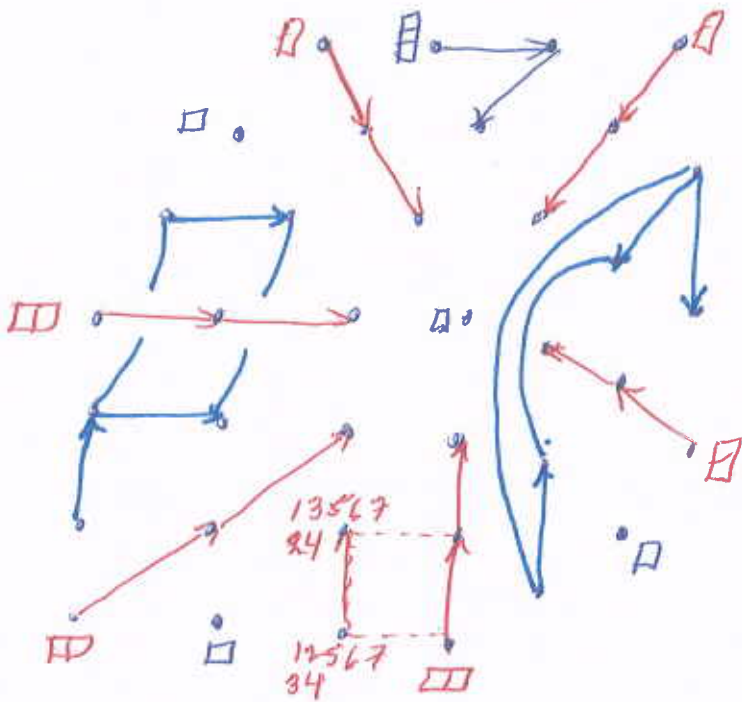
$B_7^{\square}$  at shell 6.

The shell 6

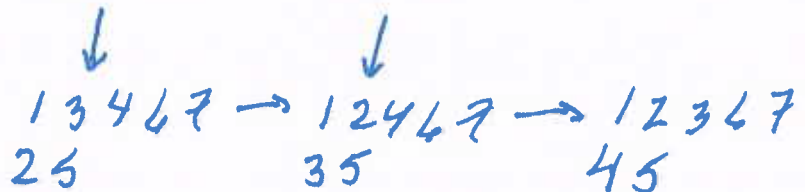
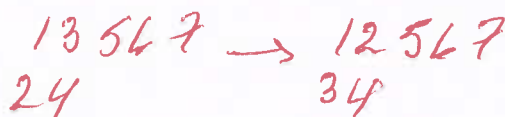


# The 5-shell

$$B_5^{\square} \oplus B_5^{\square} \oplus B_5^{\square} = B_5^{\square} + 4B_5^{\square} + 3B_5^{\square} + 3B_5^{\square} + 2B_5^{\square} + B_5^{\square}$$

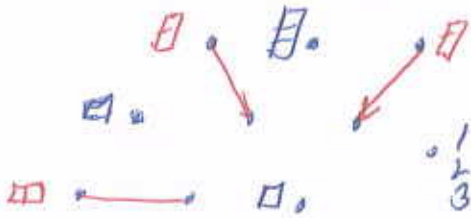


One copy of  $B_4^{\square}$  appears on this level



## The 4-shell

$$B_4^{\square} \oplus B_4^{\square} \oplus B_4^{\square} = B_4^{\phi} \oplus 4B_4^{\square} \oplus 2B_4^{\square} \oplus 3B_4^{\square} \oplus B_4^{\square}$$



$$\begin{matrix} 1 & 5 & 6 & 7 \\ 2 & & & \\ 3 & & & \\ 4 & & & \end{matrix} \text{ for } B_4^{\square}$$



$$\begin{matrix} 1 & 3 & 5 & 6 & 7 \\ 2 & & & & \\ 4 & & & & \end{matrix} \rightarrow \begin{matrix} 1 & 2 & 5 & 6 & 7 \\ 3 & & & & \\ 4 & & & & \end{matrix} \text{ for } B_4^{\square}$$

$$\begin{matrix} 1 & 3 & 5 & 6 & 7 \\ 2 & & & & \\ 4 & & & & \end{matrix} \rightarrow \begin{matrix} 1 & 2 & 5 & 6 & 7 \\ 3 & & & & \\ 4 & & & & \end{matrix} \text{ for } B_4^{\square}$$

Two extra

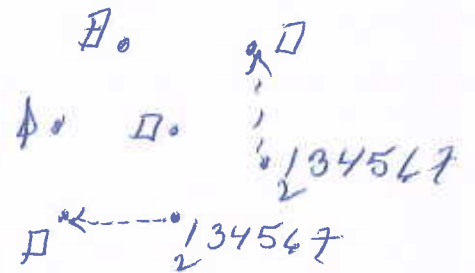
$\begin{matrix} 1 & 4 & 5 & 6 & 7 \\ 2 & & & & \\ 3 & & & & \end{matrix}$  need to appear on this level.

$$\begin{matrix} 1 & 2 & 3 & 5 & 6 & 7 \\ 4 & & & & & \end{matrix} \text{ for } B_4^{\square}$$

One extra  $\begin{matrix} 1 & 2 & 4 & 5 & 6 & 7 \\ 3 & & & & & \end{matrix} \rightarrow \begin{matrix} 1 & 2 & 3 & 5 & 6 & 7 \\ 4 & & & & & \end{matrix}$  appears on this level.

## The 3-shell

$$B_3^{\square} \oplus B_3^{\square} \oplus B_3^{\square} = B_3^{\phi} \oplus 3B_3^{\square} + B_3^{\square}$$



$$\begin{matrix} 1 & 2 & 4 & 5 & 6 & 7 \\ 3 & & & & & \end{matrix} \text{ for } B_3^{\square}$$

$$\begin{matrix} 1 & 4 & 5 & 6 & 7 \\ 2 & & & & \\ 3 & & & & \end{matrix} \text{ for } B_3^{\square}$$

(1) need one  $B_3^{\phi}$  appearing on this level.  
 (2) need 2 copies of  $\begin{matrix} 1 & 3 & 4 & 5 & 6 & 7 \\ 2 & & & & & \end{matrix} \rightarrow \begin{matrix} 1 & 2 & 4 & 5 & 6 & 7 \\ 3 & & & & & \end{matrix}$  on this level.

## The 2-shell

$$B_2^{\square} \oplus B_2^{\square} \oplus B_2^{\square} = B_2^{\square}$$

$$\begin{matrix} \bullet & \square \\ 1 & 3 & 4 & 5 & 6 & 7 \\ 2 & & & & & \end{matrix} \text{ for } B_2^{\square}$$