Dynkin diagram

T Group: ⓪ → 熵群 / ~~群~~

	e	$3C_2$	4ω	$4\omega^2$
E_1	1	1	1	1
E_2	1	1	ω	ω^*
E_3	1	1	ω^*	ω
T	3	-1	0	0

$$12 = 1^0 + 1^2 + 1^2 + 3^2 \qquad \uparrow \text{特征的表是 Class}$$
$$\text{的函数}$$

- $SO(3)$ irreducible representation

$$\chi^\ell_{(\theta)} = \sum \langle \ell, m | D(\theta) | \ell, m \rangle$$

$$= \quad \frac{\sin \frac{\ell+1}{2}(\ell + \frac{1}{2})\theta}{\sin \frac{\theta}{2}} \qquad = -1$$

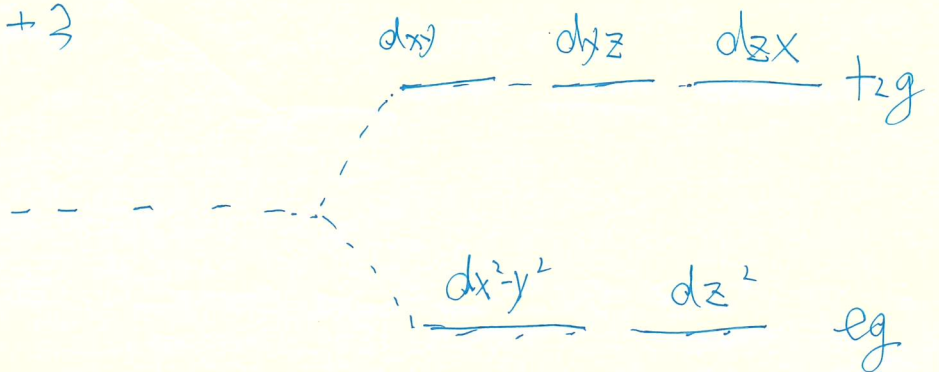$$\chi^\ell(\theta 0) = 5 \qquad \chi^\ell(\pi) = \frac{\sin(\frac{5}{2}\pi)}{\sin(\frac{\pi}{2})} = 1$$

$$\chi(\frac{\pi}{3}) = \frac{\sin(\theta \frac{5}{6}\pi)}{\sin(\frac{\pi}{6})} = -1 \qquad \chi(\frac{2\pi}{3}) = \frac{\sin(\frac{3\pi}{3})}{\sin(\frac{\pi}{3})}$$
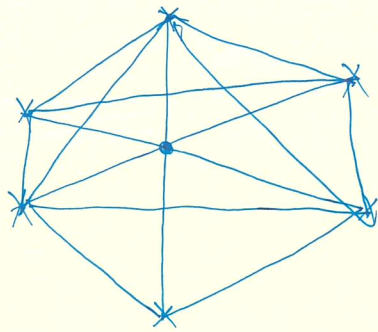
$$\chi(G) = \overline{5} \quad -1 \quad -1 \quad -1$$

$$D^{l=2} = E \circledast E' \oplus T \implies 5 = 1 + 1 + 3$$

由于复表示： E 和 E' 仍然是简并的

$$5 = 2 + 3$$

$d_{xy} \quad d_{yz} \quad d_{zx} \quad t_{2g}$

$d_{x^2-y^2} \quad d_{z^2} \quad eg$

O 群也可以吸收：

T 群是 O 群一个

正规子群

如果是 d 轨道，那么则一定会有 3+2

Molecular crystal field splitting

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