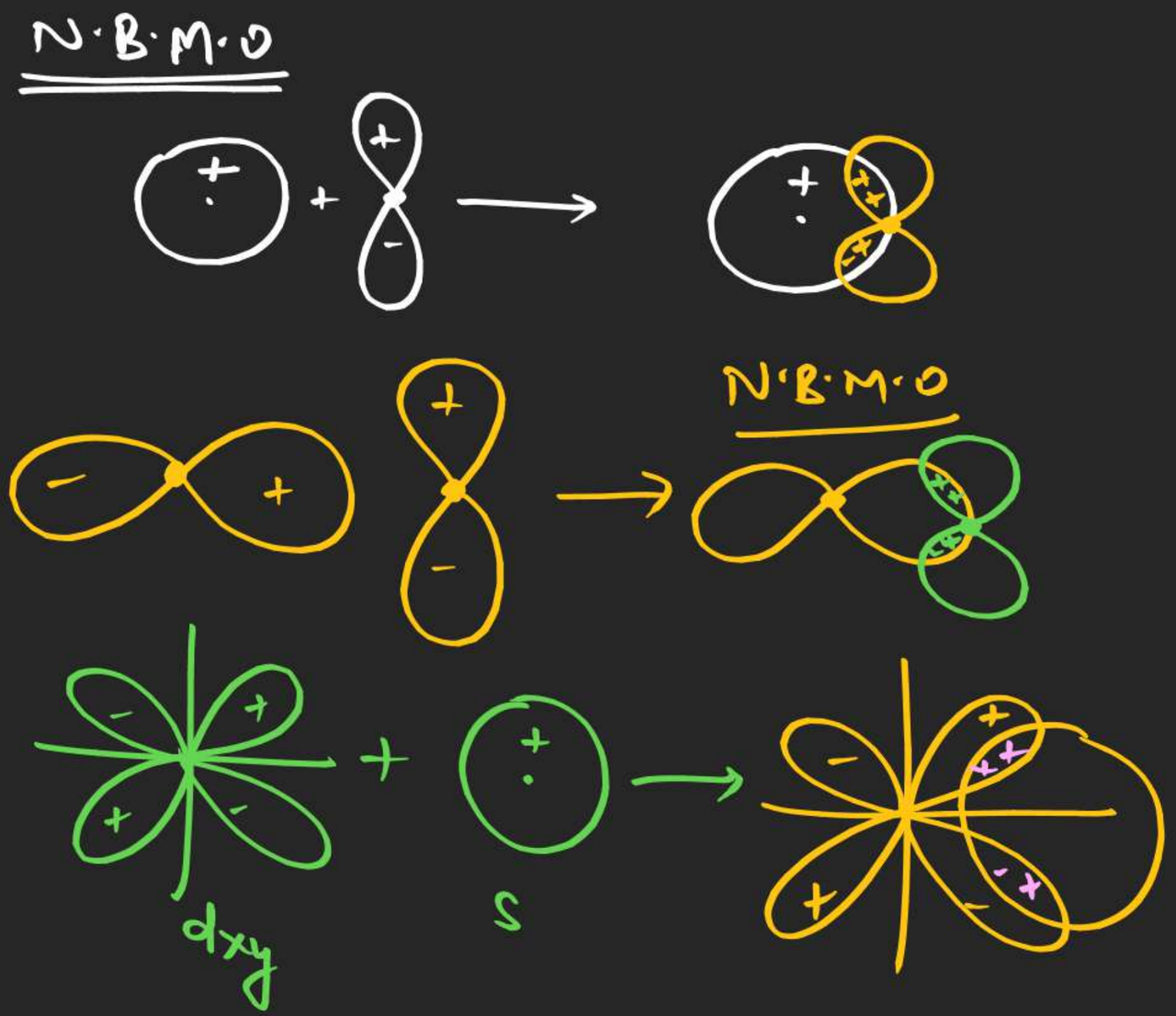

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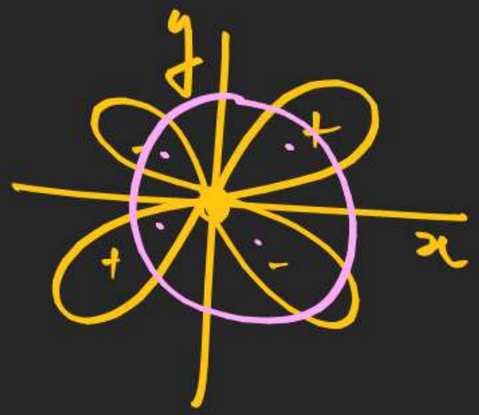
If z is internuclear axis then

d_{xy} +s ⟶



que $d_{x^2-y^2}$ and d_{xy} form N·B·M·O when z is internuclear axis.

yes

que $d_{x^2-y^2}$ or d_{xy} form N·B·M·O when z is inter nuclear axis

No

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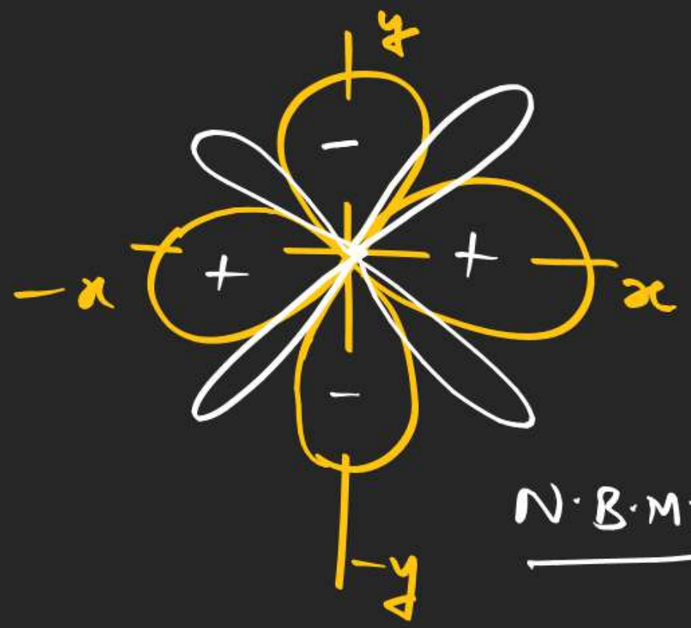

N·B·M·O

$d_{x^2-y^2}$

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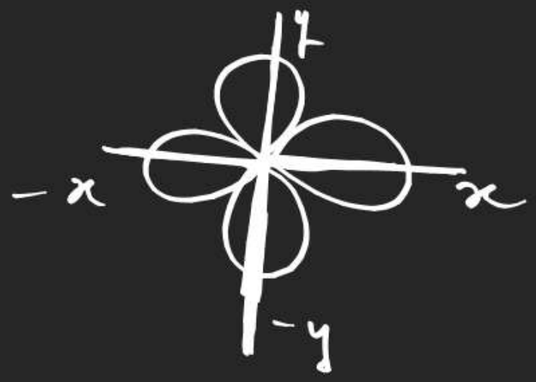
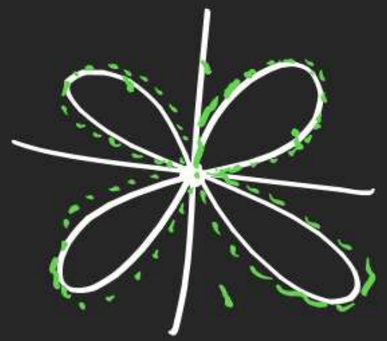


Same phase → δ-BMO

Opp. phase → * δ ABMO



Same phase → δ-B.M.O → N.P → 2

Opp. phase → * δ-A.B.M.O → 3

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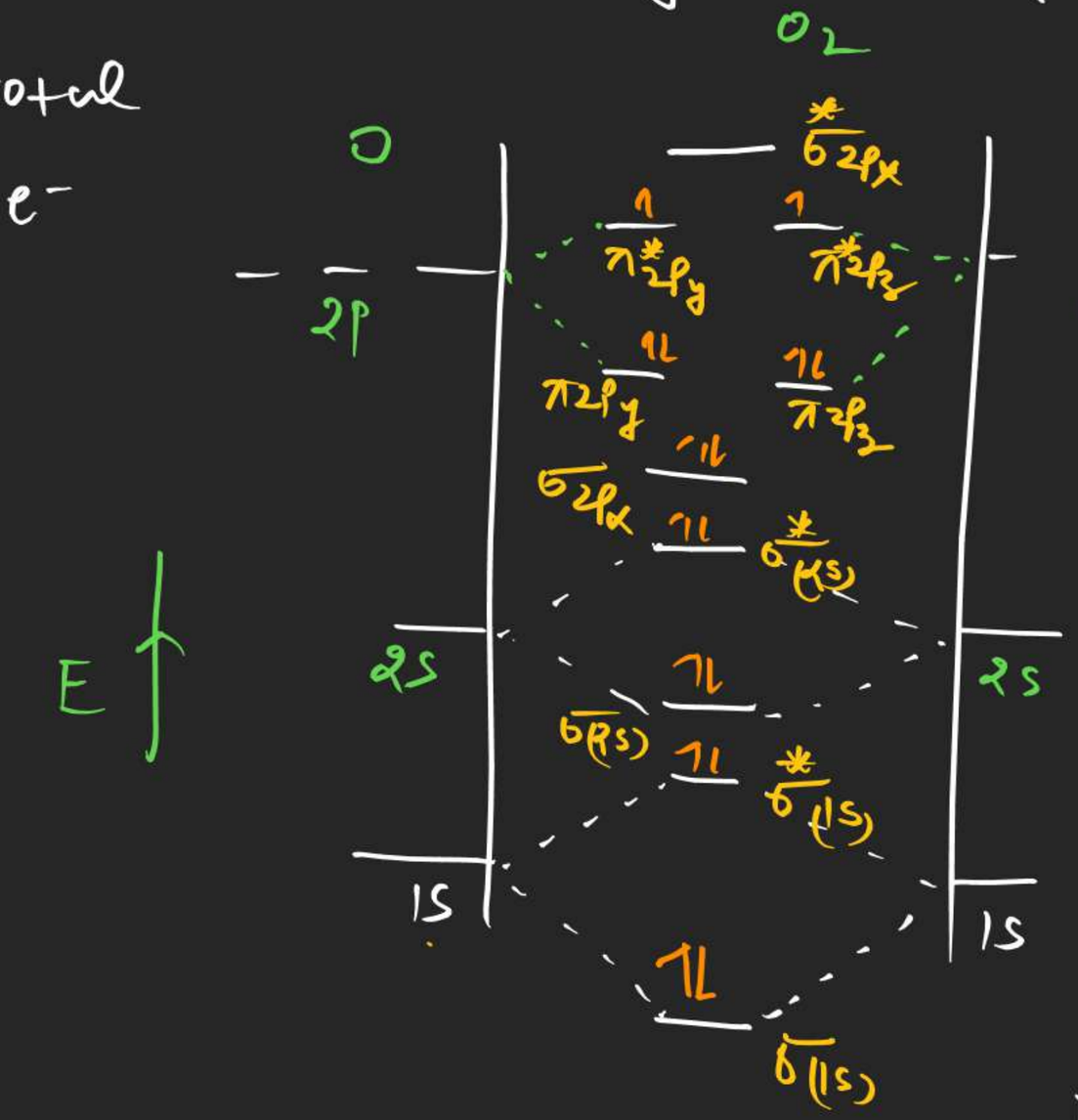
energy level dia. of O_2

When total number of e^- > 14 e^-



$$B.O = \frac{1}{2}(N_B - N_A)$$

N_B = no of B.M.O e^-

N_A = no of A.B.M.O e^-

$$B.O = \frac{1}{2}(10-6)$$

$$= \frac{1}{2} \times 4 = 2$$

Nature = paramagnetic

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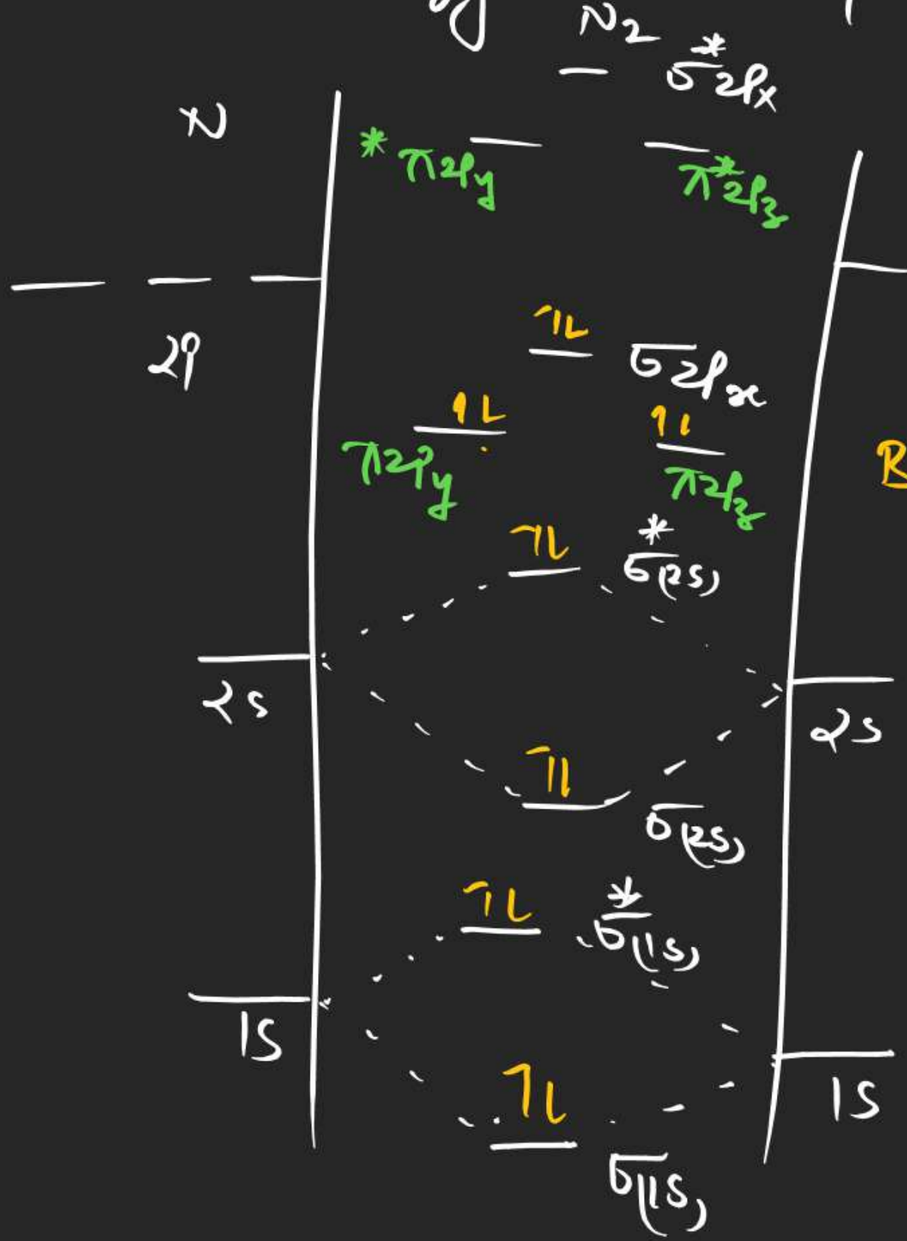
energy level dia of N_2



When total number of $e^- \leq 14 e^-$

$B.O = \frac{1}{2}(N_B - N_A)$ $\quad :O::O:$

$= \frac{1}{2}(10-4)$

$= \frac{1}{2} \times 6$

$= 3$

Nature = Diamag

Ques B.O = 2 2.5 1.5 3 1

O_2 O_2^+ O_2^- O_2^{+2} O_2^{-2}

B.L $O_2^{-2} > O_2^- > O_2 > O_2^+ > O_2^{+2}$

= Order of B.L

$B.O = \frac{1}{2}(N_B - N_A)$

Keypoint

B.O ↑ B.L ↓

1 e^- ↑ in B.M.O then B.O ↑ by 0.5

1 e^- ↑ in AB.M.O, B.O ↓ by 0.5

1 e^- ↓ in B.M.O B.O ↓ by 0.5

1 e^- ↓ in A.B.M.O B.O ↑ by 0.5

↑ ↑ — AB.M.O

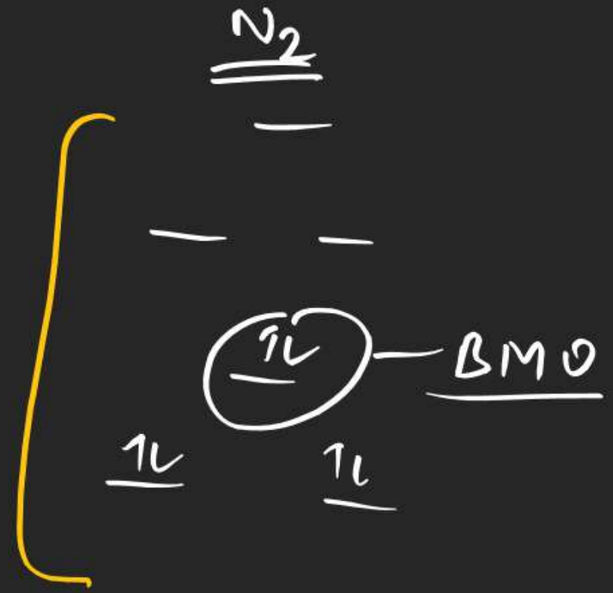
π_L π_L

π_L

N_2 N_2^+ N_2^- N_2^{-2} N_2^{+2}

B.L

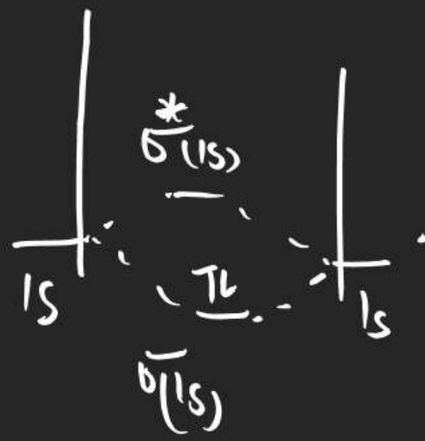
	N_2	N_2^+	N_2^-	N_2^{+2}	N_2^{-2}
B.O =	3	2.5	2.5	2	2



$$N_2 < N_2^+ = N_2^- < N_2^{+2} = N_2^{-2}$$

When B.O same then if number of A.B.M.O e^- ↑ then B.L ↑

$$N_2 < N_2^+ < N_2^- < N_2^{+2} < N_2^{-2}$$



and

$$H_2 < H_2^+ < H_2^-$$

	H_2	H_2^+	H_2^-
B.O =	1	0.5	0.5

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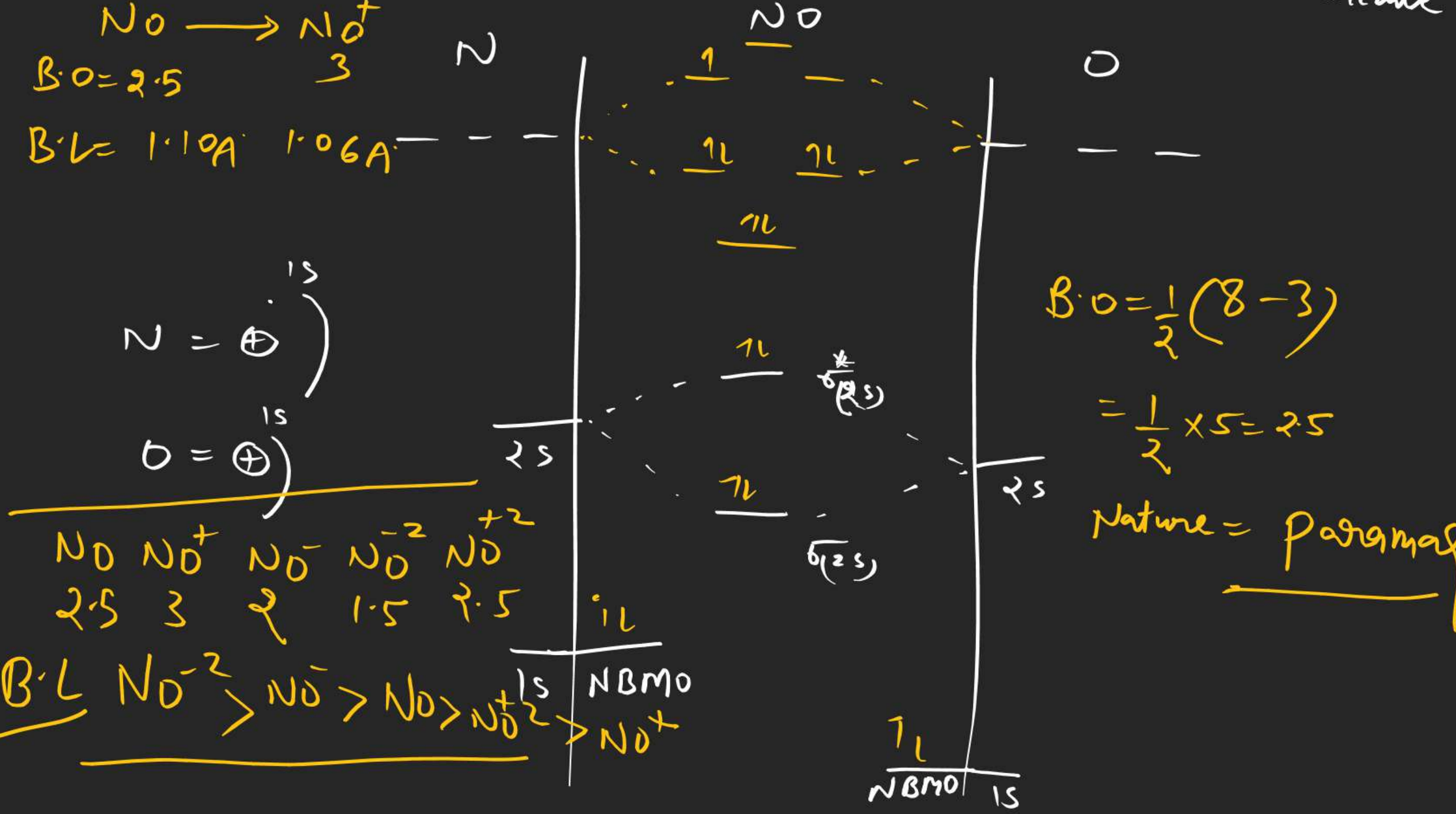
energy level dia of heteronuclear diatomic molecule

$NO \longrightarrow NO^+$

B.O = 2.5 3

B.L = 1.10Å 1.06Å



	NO	NO^+	NO^-	NO^{-2}	NO^{+2}
	2.5	3	2	1.5	2.5

B.L $NO^{-2} > NO^- > NO > NO^+ > NO^{+2}$

$B.O = \frac{1}{2}(8-3)$

$= \frac{1}{2} \times 5 = 2.5$

Nature = Paramag.