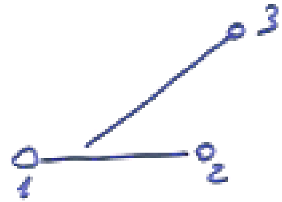
Construction of a state with specific symmetry

$A = 3$

$Y_{[K]}(\Omega) \equiv Y_{[K]}(\Omega_1)$



$p = 1$

We define an hyperangular-spin-isospin state

$$\mathcal{Y}^n_\alpha(p=1) = \left[Y_{[K_\alpha]}(\Omega_1)\, \chi_{S_\alpha}^{S_{12}^\alpha} \right]_{J J_z} \xi_{T_\alpha}^{T_{12}^\alpha}$$

The channel α is defined as

$$\{\alpha\} \equiv l_1^\alpha\, l_2^\alpha\, L_\alpha\, S_{12}^\alpha\, S_\alpha\, T_{12}^\alpha\, T_\alpha$$

An antisymmetrical state is generated as

$$B^{J J_z \pi}_{\alpha n}(\Omega) = \sum_{\substack{p \\ \text{even}}} \mathcal{Y}^n_\alpha(p)$$

with $\mathcal{Y}_\alpha(1) = (-)\, \mathcal{Y}_\alpha(1)$
$1 \leftrightarrow 2$

channels are limited with $(-)^{l_2^\alpha + S_{12}^\alpha + T_{12}^\alpha} = -1$

parity is $(-)^{l_1^\alpha + l_2^\alpha}$

For $A=3$ the even permutations are 3