

Lets walk through 1 chosen combination through the full recursion

Suppose we have selected the particles for the root constraint

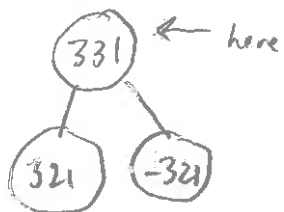
$$T^*: [C_{1\pi}^+, C_{2\pi}^-, C_{7k}^+, C_{8k}^-] \quad N^*: [N_1, N_2]$$

$$[211, -211, 321, -321] \quad [22_1, 22_2]$$

we also introduce a new set of arrays: Boolean flags for selected particles true = used/selected "don't use again"

$$T_{flg}: [0, 0, 0, 0] \quad N_{flg}: [0, 0]$$

Starting from the top ^{left} child (we've already established root separately)



- get 331's leaves

= generate all possible combinations for 331 from unused part.
from T^*, N^* (use some rules)

- combos: $[C_{7k}^+, C_{8k}^-]$ (no more combos) of one type (Neutral or charged)

- are 331's immediate children/leaves?

> yes so mark ^{left} tracks used

- recurse to 321, -321 (these are leaves so move up)

array states

constraints particles

$$J/\psi: [C_{1\pi}^+, C_{2\pi}^-, C_{7k}^+, C_{8k}^-] [N_1, N_2]$$

$$\phi: [C_{7k}^+, C_{8k}^-]$$

$$\eta: [x, x, x, x]$$

$$\pi^0: [x, x]$$

used

$$[C_{1\pi}^+, C_{2\pi}^-, C_{7k}^+, C_{8k}^-] [N_1, N_2]$$

$$[0, 0, 1, 1] [0, 0]$$