

> get 111's leaves
 $\rightarrow [22, 22]$

> generate all combos of unused particles
 from the η combination $\binom{4}{2} = 6$ combos
 (not including N_1, N_2)

$[N_3, N_4]$

$[N_3, N_5]$

\vdots

> select first combo $[N_3, N_4]$

> are 111's children leaves? yes, flag N_3, N_4 used

> move to 22's \rightarrow these are leaves so
 recurse back out to right 111

array states

$W: [N_1, N_2, N_3, N_4, N_5, N_6, N_7]$

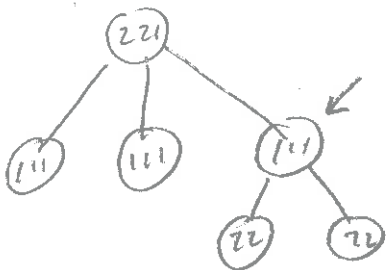
$\eta: [N_1, N_2, N_3, N_4, N_5, N_6]$

$\pi^0: [N_1, N_2]$ $\pi^0: [N_3, N_4]$ $\pi^0: [X, X]$

used

$[N_1, N_2, N_3, N_4, N_5, N_6, N_7]$

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



> get 111's leaves
 $\rightarrow [22, 22]$

> generate all combinations of unused
 particles from η $\binom{2}{2} = 1$ combo

$[N_5, N_6]$

> is 111's children leaves? yes
 mark used

> recurse out to 22's child of
 used flag

array states

$W: [N_1, N_2, N_3, N_4, N_5, N_6, N_7]$ $\pi^0: [N_1, N_2]$

$\eta: [N_1, N_2, N_3, N_4, N_5, N_6]$ $\pi^0: [N_3, N_4]$ $[N_1, N_2, N_3, N_4, N_5, N_6, N_7]$

$\pi^0: [N_5, N_6]$ $[1, 1, 1, 1, 1, 1, 0]$

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