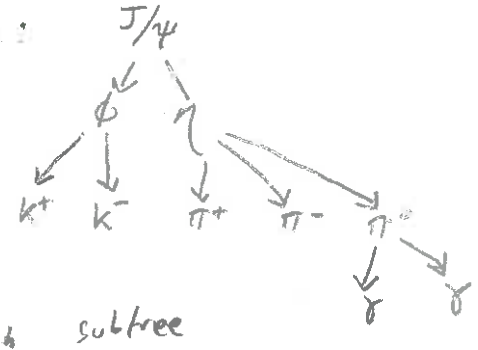
Consider the decay chain:



This decay chain is encoded into a k-ary tree where each subtree is represented as a bracketed string, with a delimiter that indicates whether or not to apply a mass constraint at this sub tree, The decay chain would be represented as, (going top down left to right] in terms of PDG codes

$$[443, 331, 221, 3.096][331, 321, -321, 1.0195][221, 211, -211, 111, 0.547][111, 22, 22, 0.135]$$

443 = J/ψ, 331 = φ, 221 = η, 3.096 = $m_{J/\psi}$; 331 = φ, 321 = K^+, −321 = K^-, 1.0195 = m_ϕ; 221 = η, 211 = π^+, −211 = π^-, 111 = π^0, 0.547 = m_η; 111 = π^0, 22 = γ, 22 = γ, 0.135 = m_{π^0}

Parent; Children; mass [GeV]

Each subtree is read with the exact array element orderings scheme. if a mass constraint isn't going to be applied to a particular subtree the last element should be $=-1$

i.e. [parent, children..., -1]

Suppose we have a reconstructed event consisting of 7 particles 4 tracks and 3 neutrals (Photons)

Carray $[C_1^+, C_2^-, C_3^+, C_4^-]$ Narray $[N_1, N_2, N_3]$

Suppose the true set is:

$$[C_1^+ = \pi^+, C_2^- = \pi^-, C_3^+ = K^+, C_4^- = K^-]$$

and

$$[N_1 = \gamma_1, N_2 = \gamma_2] \quad N_3 \text{ is an extra photon}$$