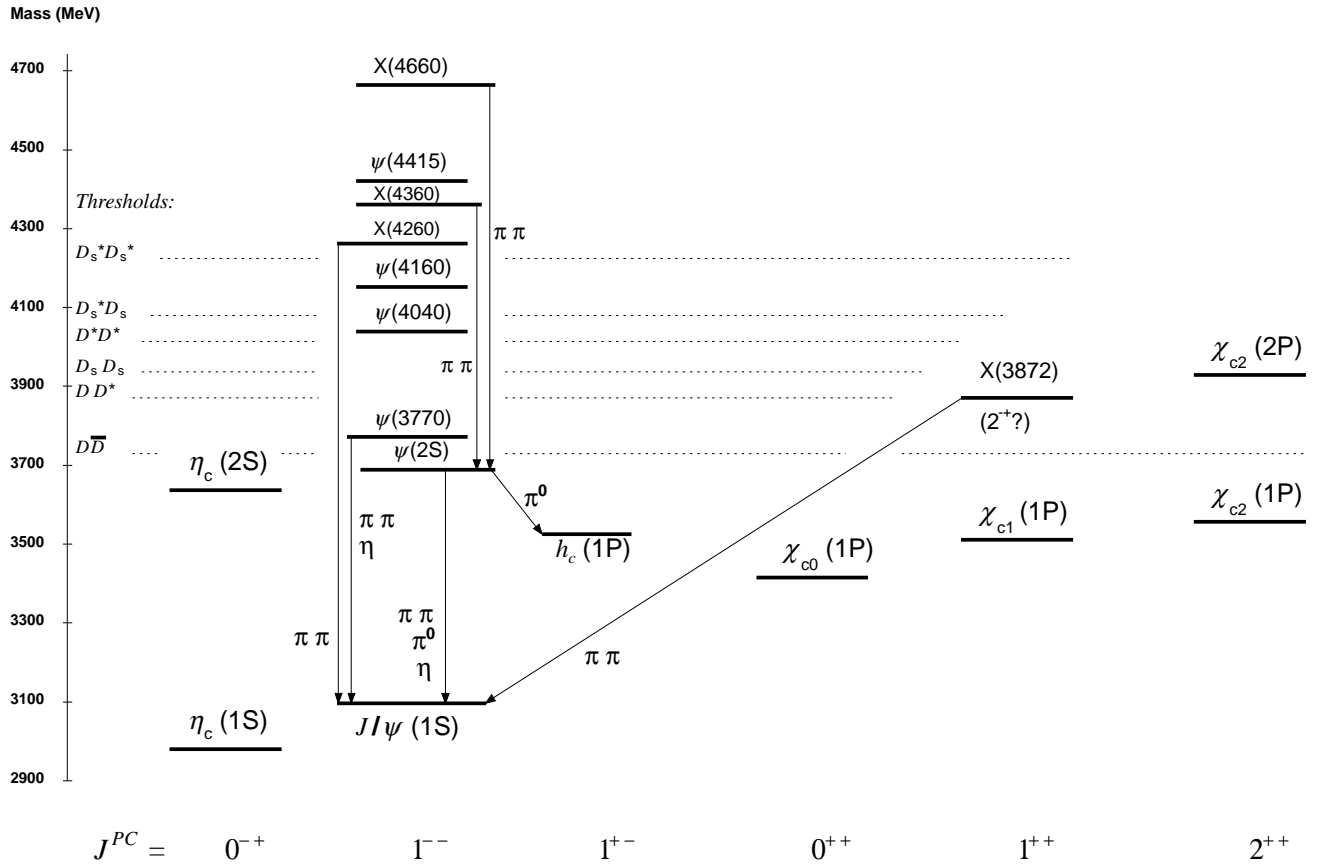


91. Charmonium System

Updated in 2012.



The level scheme of the $c\bar{c}$ states showing experimentally established states with solid lines. Singlet states are called η_c and h_c , triplet states ψ and χ_{cJ} , and unassigned charmonium-like states X . In parentheses it is sufficient to give the radial quantum number and the orbital angular momentum to specify the states with all their quantum numbers. Only observed hadronic transitions are shown; the single photon transitions $\psi(nS) \rightarrow \gamma\eta_c(mP)$, $\psi(nS) \rightarrow \gamma\chi_{cJ}(mP)$, and $\chi_{cJ}(1P) \rightarrow \gamma J/\psi$ are omitted for clarity.