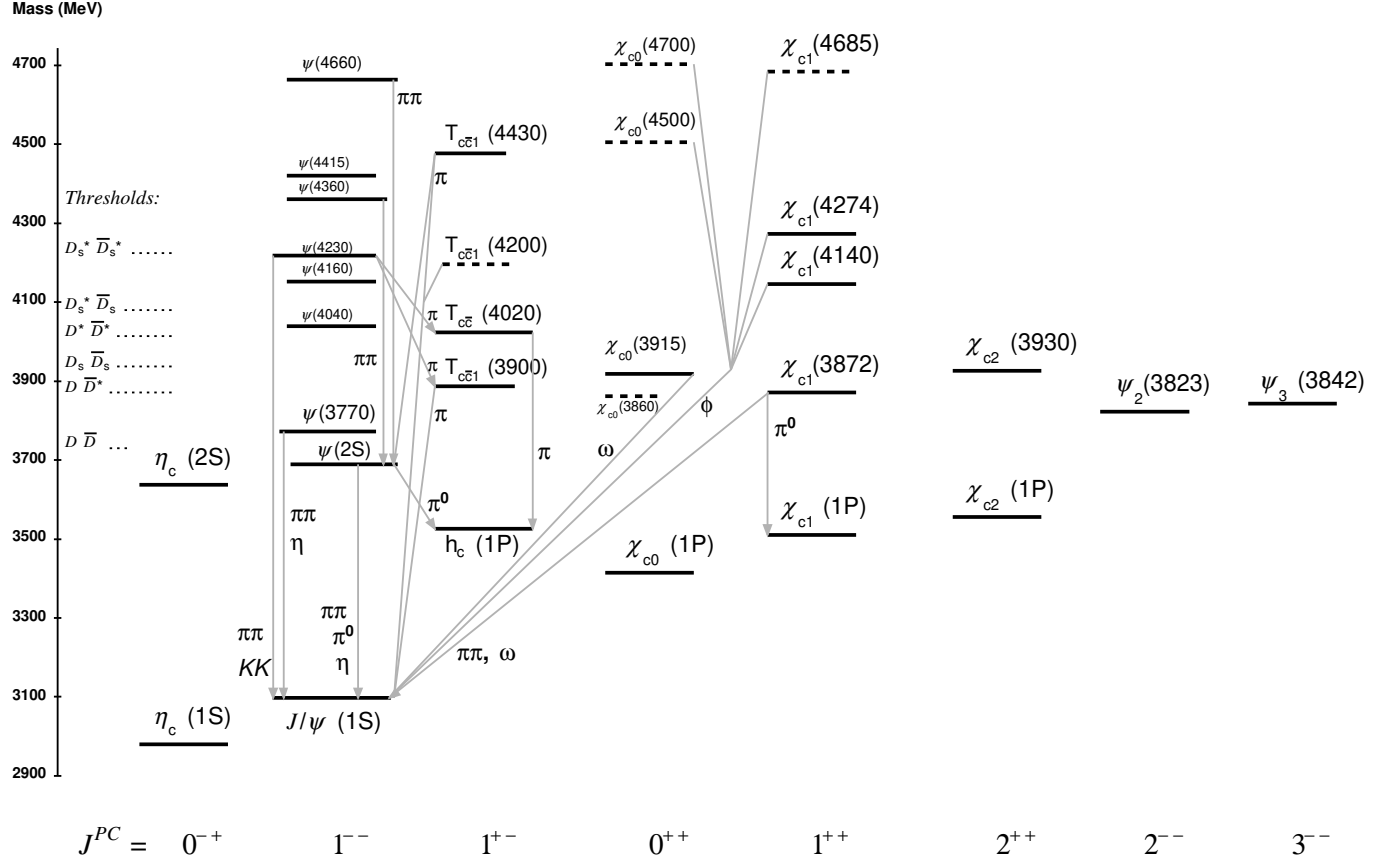


## Charmonium System

Updated March 2024.



The level scheme of meson states containing a minimal quark content of  $c\bar{c}$  and having  $S = C = B = 0$ . The name of a state is determined by its quantum numbers  $I^G J^{PC}$  (see the review “Naming Scheme for Hadrons”). States included in the Summary Tables are shown with solid lines; selected states not in the Summary Tables, but with assigned quantum numbers, are shown with dotted lines. The arrows indicate the most dominant hadronic transitions. Single photon transitions, including  $\psi(nS) \rightarrow \gamma\eta_c(mS)$ ,  $\psi(nS) \rightarrow \gamma\chi_{cJ}(1P)$ , and  $\chi_{cJ}(1P) \rightarrow \gamma J/\psi$ , are omitted for clarity. For orientation, the location of the thresholds related to a pair of ground state open charm mesons is indicated in the figure. The  $J^P$  of  $T_{c\bar{c}}(4020)$  is not established. Decays to open flavour final states are not shown in the figure.