

## THE BOTTOMONIUM SYSTEM

The level scheme of the  $b\bar{b}$  states showing experimentally established lines. Singlet states are called  $\eta_b$  and  $h_b$ , triplet states  $\Upsilon$  and  $\chi_{bJ}$ .  $n$  is sufficient to give the radial quantum number and the orbital angular momentum  $L$  to specify the states with all their quantum numbers. *E.g.*,  $h_b(2P)$  means  $n = 2$ ,  $L = 1$ ,  $S = 0$ ,  $J = 1$ ,  $PC = +-.$  If found,  $D$ -wave states  $\eta_b(nD)$  and  $\Upsilon_J(nD)$ , with  $J = 1, 2, 3$  and  $n = 1, 2, 3, 4, \dots$ . For the spins of only the  $\chi_{b2}(1P)$  and  $\chi_{b1}(1P)$  have been experimentally determined, the spins of the other  $\chi_b$  are given as the preferred values, based on theoretical models. The figure also shows the observed hadronic and radiative transitions.