

XYZ hadronic transitions

○ Many new states : ?

(Round table Friday)

State	EXP	M + i Γ (MeV)	J ^{PC}	Decay Modes Observed	Production Modes Observed
X(3872)	Belle, CDF, D0, Cleo, BaBar	3871.2±0.5 + i(<2.3)	1 ⁺⁺	$\pi^+\pi^-J/\psi$, $\pi^+\pi^-\pi^0J/\psi$, $\Upsilon J/\psi$	B decays, ppbar
	Belle BaBar	3875.4±0.7 ^{+1.2} _{-2.0} 3875.6±0.7 ^{+1.4} _{-1.5}		D ⁰ D ⁰ π^0	B decays
Z(3930)	Belle	3929±5±2 + i(29±10±2)	2 ⁺⁺	D ⁰ D ⁰ , D ⁺ D ⁻	$\Upsilon\Upsilon$
Y(3940)	Belle BaBar	3943±11±13 + i(87±22±26) 3914.3 ^{+3.8} _{-3.4} ±1.6 + i(33 ⁺¹² ₋₈ ±0.60)	J ⁺⁺	$\omega J/\psi$	B decays
X(3940)	Belle	3942 ⁺⁷ ₋₆ ±6 + i(37 ⁺²⁶ ₋₁₅ ±8)	J ^{P+}	DD*	e ⁺ e ⁻ (recoil against J/ψ)
Y(4008)	Belle	4008±40 ⁺⁷² ₋₂₈ + i(226±44 ⁺⁸⁷ ₋₇₉)	1 ⁻⁻	$\pi^+\pi^-J/\psi$	e ⁺ e ⁻ (ISR)
X(4160)	Belle	4156 ⁺²⁵ ₋₂₀ ±15 + i(139 ⁺¹¹¹ ₋₆₁ ±21)	J ^{P+}	D*D*	e ⁺ e ⁻ (recoil against J/ψ)
Y(4260)	BaBar Cleo Belle	4259±8 ⁺⁸ ₋₆ + i(88±23 ⁺⁶ ₋₄) 4284 ⁺¹⁷ ₋₁₆ ±4 + i(73 ⁺³⁹ ₋₂₅ ±5) 4247±12 ⁺¹⁷ ₋₃₂ + i(108±19±10)	1 ⁻⁻	$\pi^+\pi^-J/\psi$, $\pi^0\pi^0J/\psi$, K ⁺ K ⁻ J/ψ	e ⁺ e ⁻ (ISR), e ⁺ e ⁻
Y(4350)	BaBar Belle	4324±24 + i(172±33) 4361±9±9 + i(74±15±10)	1 ⁻⁻	$\pi^+\pi^-\psi(2S)$	e ⁺ e ⁻ (ISR)
Z ⁺ (4430)	Belle	4433±4±1 + i(44 ⁺¹⁷ ₋₁₃ ⁺³⁰ ₋₁₁)	J ^P	$\pi^+\psi(2S)$	B decays
Y(4620)	Belle	4664±11±5 + i(48±15±3)	1 ⁻⁻	$\pi^+\pi^-\psi(2S)$	e ⁺ e ⁻ (ISR)