# $X(10610)^0$

$$I^G(J^P) = 1^+(1^+)$$

OMITTED FROM SUMMARY TABLE

Observed by KROKOVNY 13 in $\Upsilon(10860) \to \Upsilon(nS)\pi^0\pi^0$ (n=2,3). Isospin 1 is favored from the proximity in mass to $X(10610)^\pm$ and their similarity of observed decay modes and cross sections. $J^P$ = $1^+$ is favored from angular analysis of $X(10610)^\pm$ decays by BONDAR 12.

## $X(10610)^0$ MASS

| VALUE (MeV) | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|
| **10609±4±4** | [1] KROKOVNY | 13 | BELL | $e^+e^- \to \Upsilon(2S)/\Upsilon(3S)\pi^0\pi^0$ |

[1] From a simultaneous fit to the KROKOVNY 13 Dalitz analysis of $e^+e^- \to \Upsilon(2S)/\Upsilon(3S)\pi^0\pi^0$ decays with fixed width $\Gamma(X(10610)^0) = 18.4$ MeV.

## $X(10610)^0$ DECAY MODES

| | Mode | Fraction ($\Gamma_i/\Gamma$) |
|---|---|---|
| $\Gamma_1$ | $\Upsilon(1S)\pi^0$ | not seen |
| $\Gamma_2$ | $\Upsilon(2S)\pi^0$ | seen |
| $\Gamma_3$ | $\Upsilon(3S)\pi^0$ | seen |

## $X(10610)^0$ BRANCHING RATIOS

### $\Gamma(\Upsilon(1S)\pi^0)/\Gamma_{total}$ $\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ $\Gamma_1/\Gamma$

| VALUE | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|
| **not seen** | KROKOVNY | 13 | BELL | $e^+e^- \to \Upsilon(1S)\pi^0\pi^0$ |

### $\Gamma(\Upsilon(2S)\pi^0)/\Gamma_{total}$ $\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ $\Gamma_2/\Gamma$

| VALUE | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|
| **seen** | [2] KROKOVNY | 13 | BELL | $e^+e^- \to \Upsilon(2S)\pi^0\pi^0$ |

[2] Combined significance in $e^+e^- \to \Upsilon(2S)/\Upsilon(3S)\pi^0\pi^0$, including systematics, of 6.5$\sigma$.

### $\Gamma(\Upsilon(3S)\pi^0)/\Gamma_{total}$ $\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ $\Gamma_3/\Gamma$

| VALUE | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|
| **seen** | [3] KROKOVNY | 13 | BELL | $e^+e^- \to \Upsilon(3S)\pi^0\pi^0$ |

[3] Combined significance in $e^+e^- \to \Upsilon(2S)/\Upsilon(3S)\pi^0\pi^0$, including systematics, of 6.5$\sigma$.

## $X(10610)^0$ REFERENCES

| KROKOVNY | 13 | PR D88 052016 | P. Krokovny *et al.* | (BELLE Collab.) |
|---|---|---|---|---|
| BONDAR | 12 | PRL 108 122001 | A. Bondar *et al.* | (BELLE Collab.) |