

$a_1(1640)$

$$I^G(J^{PC}) = 1^+(1^{++})$$

OMITTED FROM SUMMARY TABLE

Seen in the amplitude analysis of the $3\pi^0$ system produced in $\bar{p}p \rightarrow 4\pi^0$. Possibly seen in the study of the hadronic structure in decay $\tau \rightarrow 3\pi\nu_\tau$ (ABREU 98G). Needs confirmation.

$a_1(1640)$ MASS

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|---|--------------------|------|---|
| $1640 \pm 12 \pm 30$ | ¹ BAKER | 99 | SPEC 1.94 $\bar{p}p \rightarrow 4\pi^0$ |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | |
| 1670 ± 90 | BELLINI | 85 | SPEC 40 $\pi^- A \rightarrow \pi^- \pi^+ \pi^- A$ |

¹ Using preliminary CBAR data.

$a_1(1640)$ WIDTH

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|---|--------------------|------|---|
| $300 \pm 22 \pm 40$ | ² BAKER | 99 | SPEC 1.94 $\bar{p}p \rightarrow 4\pi^0$ |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | |
| 300 ± 100 | BELLINI | 85 | SPEC 40 $\pi^- A \rightarrow \pi^- \pi^+ \pi^- A$ |

² Using preliminary CBAR data.

$a_1(1640)$ DECAY MODES

| Mode |
|-------------------------------|
| $\Gamma_1 \quad f_2(1270)\pi$ |
| $\Gamma_2 \quad \sigma\pi$ |

$a_1(1640)$ BRANCHING RATIOS

| $\Gamma(f_2(1270)\pi)/\Gamma(\sigma\pi)$ | | Γ_1/Γ_2 | |
|--|--------------------|---------------------|---|
| VALUE | DOCUMENT ID | TECN | COMMENT |
| 0.24 ± 0.07 | ³ BAKER | 99 | SPEC 1.94 $\bar{p}p \rightarrow 4\pi^0$ |

³ Using preliminary CBAR data.

$a_1(1640)$ REFERENCES

| | | | | |
|------------------------------|-----|-------------|--------------------------|------------------|
| BAKER | 99 | PL B449 114 | C.A. Baker <i>et al.</i> | |
| ABREU | 98G | PL B426 411 | P. Abreu <i>et al.</i> | (DELPHI Collab.) |
| BELLINI | 85 | SJNP 41 781 | D. Bellini <i>et al.</i> | |
| Translated from YAF 41 1223. | | | | |