

$B_2^*(5747)^0$

$I(J^P) = \frac{1}{2}(2^+)$ Status: ***
I, J, P need confirmation.

Quantum numbers shown are quark-model predictions.

$B_2^*(5747)^0$ MASS

OUR FIT uses m_{B^+} , $m_{B_1^0} - m_{B^+}$, and $m_{B_2^{*0}} - m_{B_1^0}$ to determine $m_{B_2^*(5747)^0}$. The -0.659 correlation between statistical uncertainties of $m_{B_1^0} - m_{B^+}$ and $m_{B_2^{*0}} - m_{B_1^0}$ measurements reported by ABAZOV 07T is taken into account.

| | |
|-------------------------|-------------------------------------|
| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> |
| 5743 ± 5 OUR FIT | Error includes scale factor of 2.9. |

$B_2^*(5747)^0$ WIDTH

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--|--------------------|-------------|---------------------------|
| 22.7^{+3.8+3.2}_{-3.2-10.2} | AALTONEN 09D | CDF | $\rho\bar{p}$ at 1.96 TeV |

$m_{B_2^{*0}} - m_{B_1^0}$

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--|-------------------------------------|-------------|---------------------------|
| 19 ± 6 OUR FIT | Error includes scale factor of 3.0. | | |
| 19 ± 6 OUR AVERAGE | Error includes scale factor of 2.8. | | |
| 14.9 ^{+2.2+1.2} _{-2.5-1.4} | ¹ AALTONEN 09D | CDF | $\rho\bar{p}$ at 1.96 TeV |
| 26.2 ± 3.1 ± 0.9 | ¹ ABAZOV 07T | D0 | $\rho\bar{p}$ at 1.96 TeV |

¹ Observed in $B_2^{*0} \rightarrow B^{*+} \pi^-$ and $B_2^{*0} \rightarrow B^+ \pi^-$.

$B_2^*(5747)^0$ DECAY MODES

| Mode | Fraction (Γ_i/Γ) |
|---------------------------|--------------------------------|
| Γ_1 $B^+ \pi^-$ | dominant |
| Γ_2 $B^{*+} \pi^-$ | dominant |

$B_2^*(5747)^0$ BRANCHING RATIOS

| $\Gamma(B^+ \pi^-)/\Gamma_{\text{total}}$ | Γ_1/Γ | | |
|---|--------------------|-------------|---------------------------|
| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
| dominant | AALTONEN 09D | CDF | $\rho\bar{p}$ at 1.96 TeV |
| dominant | ABAZOV 07T | D0 | $\rho\bar{p}$ at 1.96 TeV |

| $\Gamma(B^{*+} \pi^-) / \Gamma_{\text{total}}$ | | | | Γ_2 / Γ |
|--|--------------------|-------------|----------------|----------------------------|
| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> | |
| dominant | AALTONEN | 09D | CDF | $\rho \bar{p}$ at 1.96 TeV |
| dominant | ABAZOV | 07T | D0 | $\rho \bar{p}$ at 1.96 TeV |

| $\Gamma(B^{*+} \pi^-) / \Gamma(B^+ \pi^-)$ | | | | Γ_2 / Γ_1 |
|--|---------------------|-------------|----------------|----------------------------|
| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> | |
| $1.10 \pm 0.42 \pm 0.31$ | ² ABAZOV | 07T | D0 | $\rho \bar{p}$ at 1.96 TeV |

² Converted from measured ratio of $R = B(B_2^{*0} \rightarrow B^{*+} \pi^-) / B(B_2^{*0} \rightarrow B^{(*)+} \pi^-)$
 $= 0.475 \pm 0.095 \pm 0.069$.

$B_2^*(5747)^0$ REFERENCES

| | | | | |
|----------|-----|----------------|---------------------------|---------------|
| AALTONEN | 09D | PRL 102 102003 | T. Aaltonen <i>et al.</i> | (CDF Collab.) |
| ABAZOV | 07T | PRL 99 172001 | V.M. Abazov <i>et al.</i> | (D0 Collab.) |