NODE=B162

# $\Lambda_b(5912)^0$

$J^P = \frac{1}{2}^-$ Status: ***

Quantum numbers are based on quark model expectations. NODE=B162

## $\Lambda_b(5912)^0$ MASS

NODE=B162M

| *VALUE* (MeV) | *DOCUMENT ID* | | *TECN* | *COMMENT* |
|---|---|---|---|---|
| **5912.16±0.16 OUR AVERAGE** | | | | |
| 5912.16±0.03±0.16 | [1] AAIJ | 20Q | LHCB | $pp$ at 7, 8, 13 TeV |
| 5912.29±0.12±0.16 | [2] SIRUNYAN | 20K | CMS | $pp$ at 13 TeV |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| 5912.17±0.13±0.16 | [3,4] AAIJ | 12AL | LHCB | Repl. by AAIJ 20Q |

NODE=B162M NODE=B162M SYCLP=A SYCLP=A SYCLP=A

[1] AAIJ 20Q measures $m(\Lambda_b(5912)^0) - m(\Lambda_b^0) = 292.589 \pm 0.029 \pm 0.010$ MeV. We have adjusted the measurement to our best value of $m(\Lambda_b^0) = 5619.57 \pm 0.16$ MeV. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=B162M;LINKAGE=A

[2] SIRUNYAN 20K measures $m(\Lambda_b(5912)^0) - m(\Lambda_b^0) = 292.72 \pm 0.12 \pm 0.01$ MeV. We have adjusted the measurement to our best value of $m(\Lambda_b^0) = 5619.57 \pm 0.16$ MeV. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=B162M;LINKAGE=B

[3] Observed in $\Lambda_b(5912)^0 \to \Lambda_b^0 \pi^+ \pi^-$ decays with 17.6 ± 4.8 candidates with a significance of 5.2 sigma. NODE=B162M;LINKAGE=AA

[4] AAIJ 12AL measures $m(\Lambda_b(5912)^0) - m(\Lambda_b^0) = 292.60 \pm 0.12 \pm 0.04$ MeV. We have adjusted the measurement to our best value of $m(\Lambda_b^0) = 5619.57 \pm 0.16$ MeV. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=B162M;LINKAGE=AI

## $\Lambda_b(5912)^0$ WIDTH

NODE=B162W

| *VALUE* (MeV) | *CL%* | *DOCUMENT ID* | | *TECN* | *COMMENT* |
|---|---|---|---|---|---|
| **<0.25** | 90 | AAIJ | 20Q | LHCB | $pp$ at 7, 8, 13 TeV |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | | |
| <0.66 | 90 | AAIJ | 12AL | LHCB | Repl. by AAIJ 20Q |

NODE=B162W

## $\Lambda_b(5912)^0$ DECAY MODES

NODE=B162215;NODE=B162

| | Mode | Fraction ($\Gamma_i/\Gamma$) | |
|---|---|---|---|
| $\Gamma_1$ | $\Lambda_b^0 \pi^+ \pi^-$ | seen | DESIG=1 |

## $\Lambda_b(5912)^0$ BRANCHING RATIOS

NODE=B162220

**$\Gamma(\Lambda_b^0 \pi^+ \pi^-)/\Gamma_{total}$** **$\Gamma_1/\Gamma$** NODE=B162R01

| *VALUE* | *DOCUMENT ID* | | *TECN* | *COMMENT* | NODE=B162R01 |
|---|---|---|---|---|---|
| seen | AAIJ | 20Q | LHCB | $pp$ at 7, 8, 13 TeV | |
| seen | SIRUNYAN | 20K | CMS | $pp$ at 13 TeV | |
| **seen** | AAIJ | 12AL | LHCB | $pp$ at 7 TeV | |

## $\Lambda_b(5912)^0$ REFERENCES

NODE=B162


| | | | | |
|---|---|---|---|---|
| AAIJ | 20Q | JHEP 2006 136 | R. Aaij *et al.* | (LHCb Collab.) |
| SIRUNYAN | 20K | PL B803 135345 | A.M. Sirunyan *et al.* | (CMS Collab.) |
| AAIJ | 12AL | PRL 109 172003 | R. Aaij *et al.* | (LHCb Collab.) |


REFID=60505 REFID=60392 REFID=54589