

# Images

February 12, 2026

The mass of the Z boson was found to be  $91.141 \pm 0.009 \pm 0.003$  GeV where the first error is statistical and the second systematic  
The width of the Z boson was found to be  $2.005 \pm 0.025 \pm 0.001$  GeV where the first error is statistical and the second systematic  
The correlation coefficient was 0.065

	Mass	Width
Calibration error	-0.00293	0.00004
Smearing error	-0.00001	0.00134
$\Upsilon(1S)$ mass error	0.0001	0.0000

Table 1: Z Systematic error on mass and width

	Mass	Width
Values	91.14133	2.00451
Statistical error	0.00875	0.02511

Table 2: Z Mass and width results with statistical error

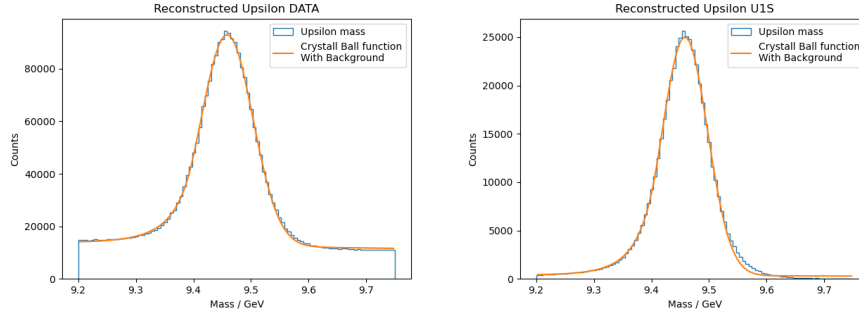


Figure 1:

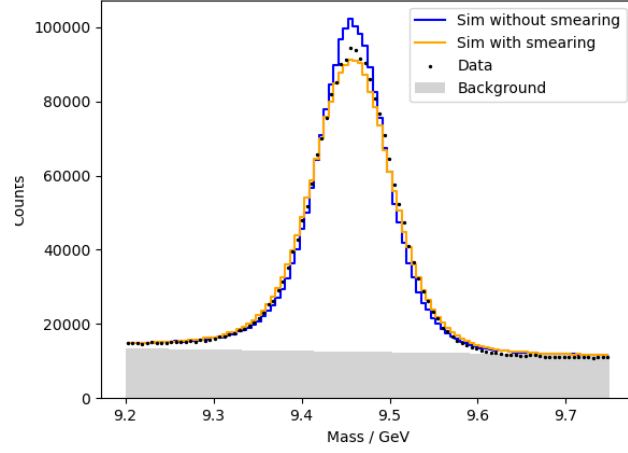


Figure 2:

$\chi^2$	ndf
406.14	48

Table 3: minimum  $\chi^2$  and number of degrees of freedom

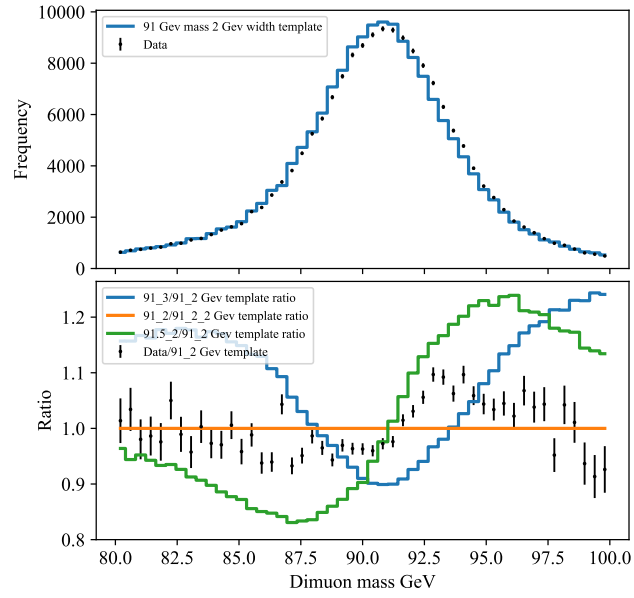


Figure 3:

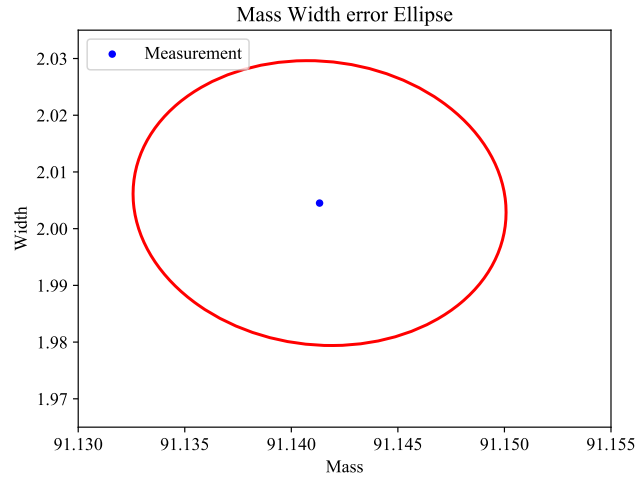


Figure 4:

When separating the positive and negative dipole data:

Measuremnt	Positive dipole	Negative dipole
Mass [GeV]	$91.101012 \pm 0.01$	$91.165108 \pm 0.01$
Width [GeV]	$1.937659 \pm 0.03$	$2.060954 \pm 0.03$
$\chi^2$	164.53	319.35
ndf	48	48

Table 4: Results for positive and negative dipoles

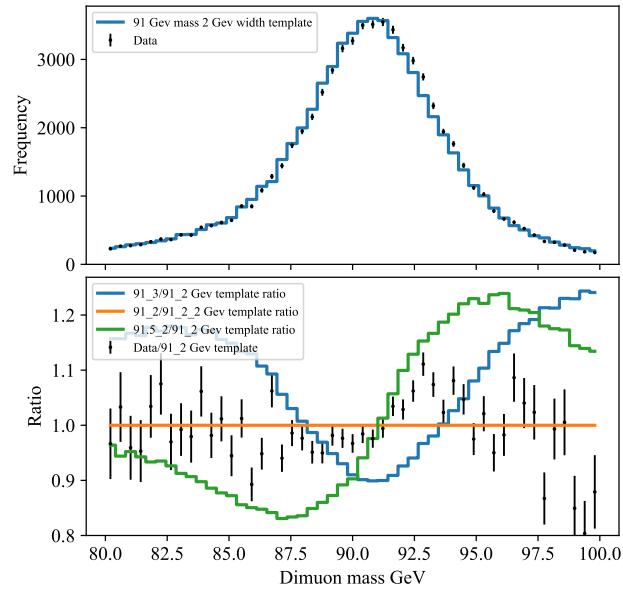


Figure 5: Positive dipole

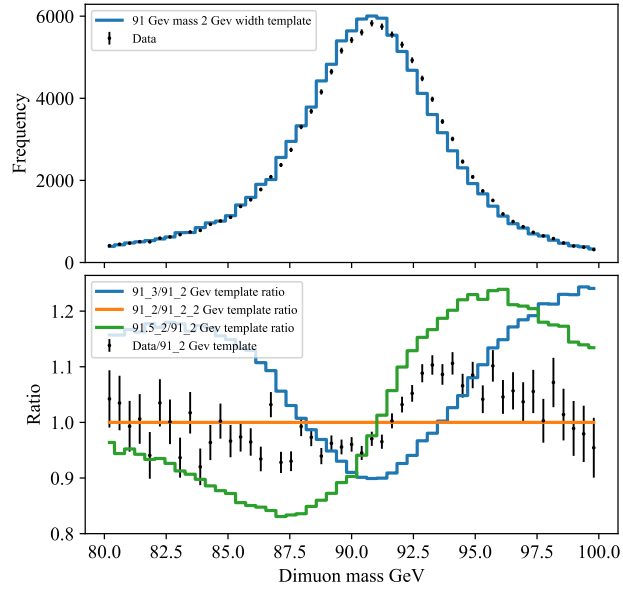


Figure 6: negative dipole