

$W$ -boson charge	$W^+$		$W^-$		Combined	
	$p_T^\ell$	$m_T$	$p_T^\ell$	$m_T$	$p_T^\ell$	$m_T$
Kinematic distribution						
$\delta m_W$ [MeV]						
Fixed-order PDF uncertainty	13.1	14.9	12.0	14.2	8.0	8.7
AZ tune	3.0	3.4	3.0	3.4	3.0	3.4
Charm-quark mass	1.2	1.5	1.2	1.5	1.2	1.5
Parton shower $\mu_F$ with heavy-flavour decorrelation	5.0	6.9	5.0	6.9	5.0	6.9
Parton shower PDF uncertainty	3.6	4.0	2.6	2.4	1.0	1.6
Angular coefficients	5.8	5.3	5.8	5.3	5.8	5.3
Total	15.9	18.1	14.8	17.2	11.6	12.9

QCD

Decay channel	$W \rightarrow e\nu$		$W \rightarrow \mu\nu$	
	$p_T^\ell$	$m_T$	$p_T^\ell$	$m_T$
Kinematic distribution				
$\delta m_W$ [MeV]				
FSR (real)	< 0.1	< 0.1	< 0.1	< 0.1
Pure weak and IFI corrections	3.3	2.5	3.5	2.5
FSR (pair production)	3.6	0.8	4.4	0.8
Total	4.9	2.6	5.6	2.6

EW