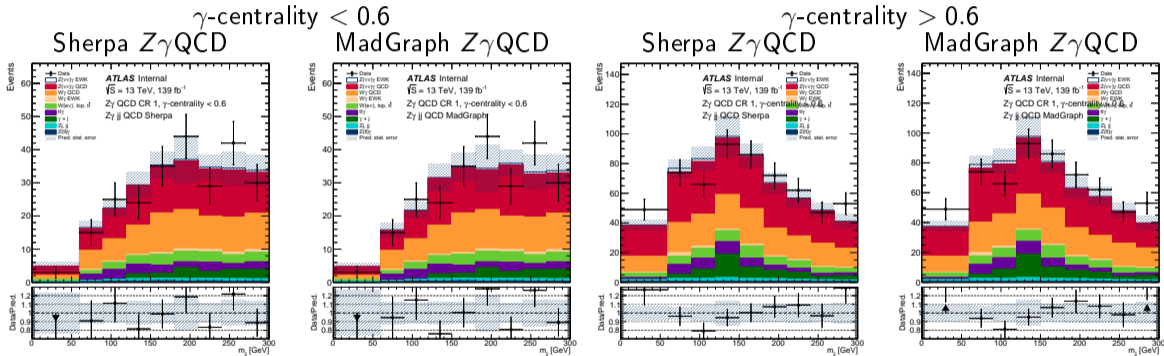
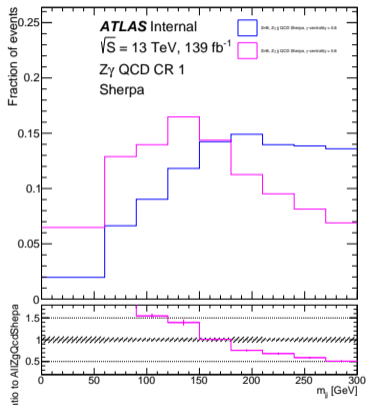


Low $m(j_1, j_2)$ in different γ -centrality regions (1/2)

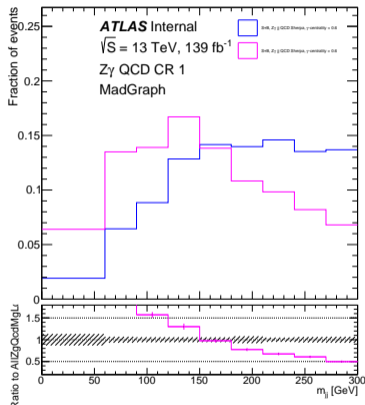


Low $m(j_1, j_2)$ in different γ -centrality regions (2/2)

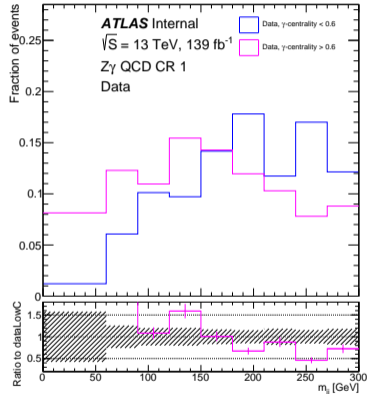
FullMC, Sherpa $Z\gamma$ QCD



FullMC, MadGraph $Z\gamma$ QCD

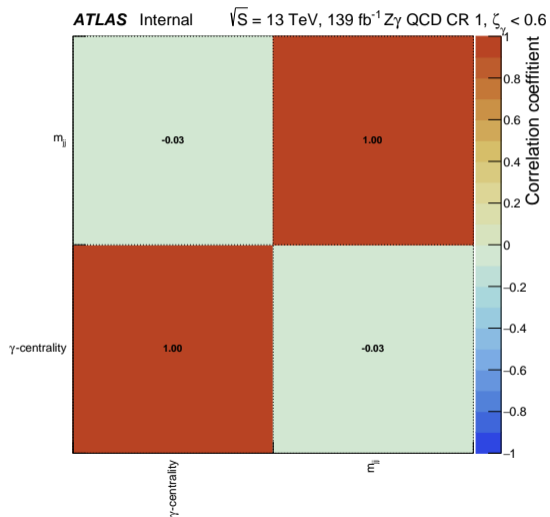


Data

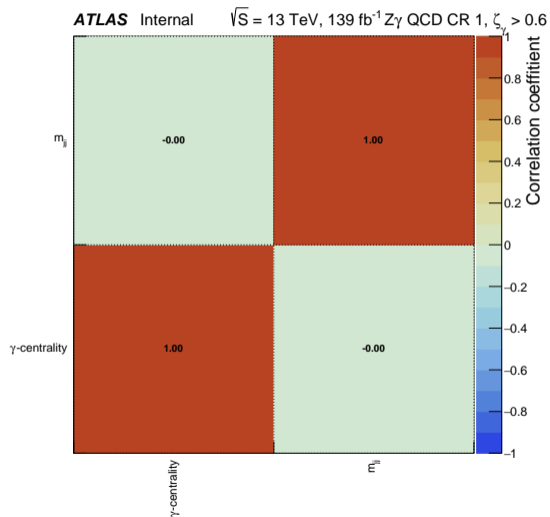


$m(j_1, j_2)$ and γ -centrality correlation in $Z\gamma$ QCD CR 1

γ -centrality < 0.6

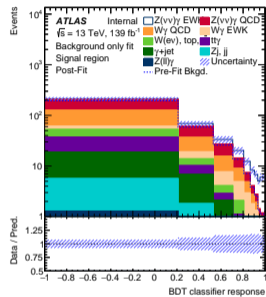
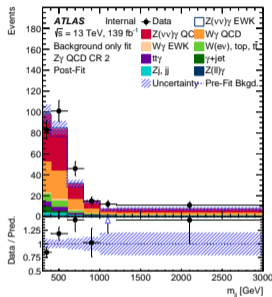
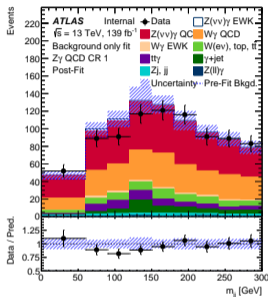
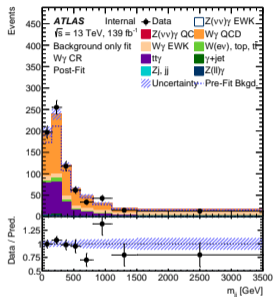


γ -centrality > 0.6



Current fit results

Background-only fit



Asimov data fit

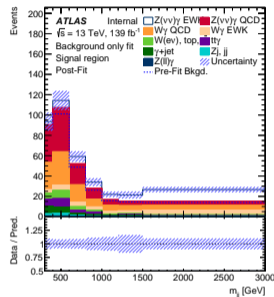
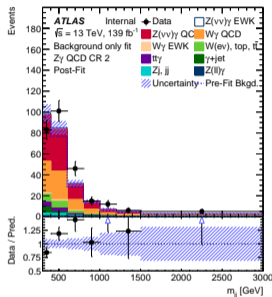
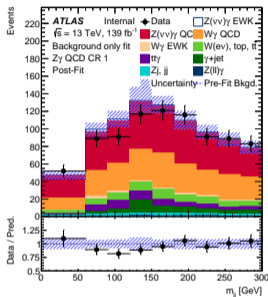
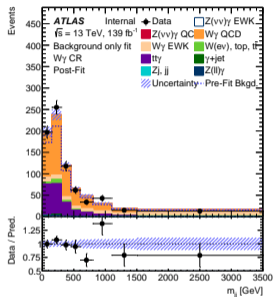
$$\begin{aligned} \mu_{Z\gamma EWK} & 1.00^{+0.27}_{-0.25}(\text{stat})^{+0.24}_{-0.17}(\text{syst}) \\ \mu_{Z\gamma QCD} & 1.08 \pm 0.08(\text{stat})^{+0.15}_{-0.16}(\text{syst}) \\ \mu_{W\gamma} & 1.06 \pm 0.04(\text{stat})^{+0.19}_{-0.13}(\text{syst}) \end{aligned}$$

Expected median cross-section
measurement significance

3.8σ

$m(j_1, j_2)$ SR fit, no shape factors

Background-only fit



Asimov data fit

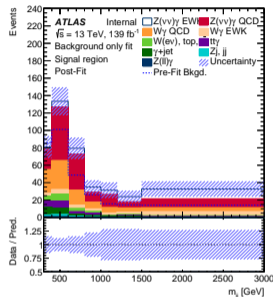
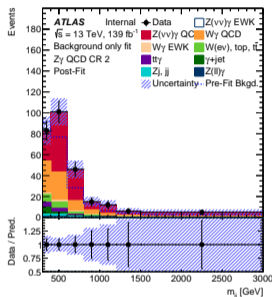
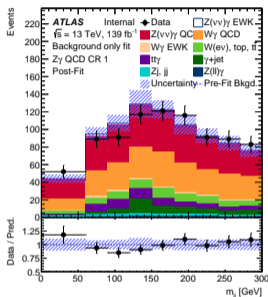
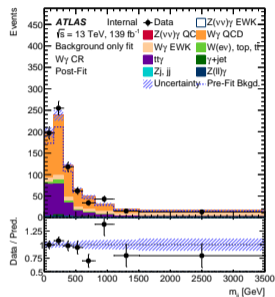
$$\begin{aligned} \mu_{Z\gamma EWK} & 1.00^{+0.35}_{-0.33}(\text{stat})^{+0.26}_{-0.21}(\text{syst}) \\ \mu_{Z\gamma QCD} & 1.08 \pm 0.08(\text{stat})^{+0.15}_{-0.16}(\text{syst}) \\ \mu_{W\gamma} & 1.09 \pm 0.04(\text{stat})^{+0.20}_{-0.14}(\text{syst}) \end{aligned}$$

Expected median cross-section
measurement significance

2.7σ

$m(j_1, j_2)$ SR fit, with shape factor

Background-only fit



Asimov data fit

$$\mu_{Z\gamma\text{EWK}} = 1.00^{+0.46}_{-0.47}(\text{stat})^{+0.31}_{-0.38}(\text{syst})$$

$$\mu_{Z\gamma\text{QCD}} = 0.95 \pm 0.09(\text{stat}) \pm 0.16(\text{syst})$$

$$\mu_{W\gamma} = 1.09 \pm 0.04(\text{stat})^{+0.20}_{-0.13}(\text{syst})$$

Expected median cross-section
measurement significance

1.9σ