

$\sigma_{tZq} \times 5 = 102^{+5}_{-2}(\text{tot.})\text{pb} \times 5$   
MadGraph 5 + aMC@NLO  
NLO QCD

$\sigma_{tZq} \times 5 = 94^{+3}_{-3}(\text{tot.})\text{pb} \times 5$   
MadGraph 5 + aMC@NLO  
NLO QCD

$\sigma_{tq\gamma} = 406^{+25}_{-32}(\text{tot.})\text{pb}$   
MadGraph 5 + aMC@NLO  
NLO QCD

$\sigma_{tq\gamma} \times 5 = 81 \pm 4(\text{tot.})\text{pb} \times 5$   
MadGraph 5 + aMC@NLO  
NLO QCD

$\sigma_{\text{meas.}} \pm (\text{stat.}) \pm (\text{syst.})$

total stat.

tZq

$97 \pm 13 \pm 7 \text{ pb} \times 5$

$88^{+8}_{-7}{}^{+7}_{-6} \text{ pb} \times 5$

tq $\gamma$

$580 \pm 19 \pm 63 \text{ pb}$

$115 \pm 17 \pm 30 \text{ pb} \times 5$

ATLAS,  $L_{\text{int}} = 139 \text{ fb}^{-1}$   
JHEP 07 (2020) 124

CMS,  $L_{\text{int}} = 138 \text{ fb}^{-1}$   
JHEP 02 (2022) 107

ATLAS,  $L_{\text{int}} = 139 \text{ fb}^{-1}$ , Vis 1  
ATLAS-CONF-2022-013

CMS,  $L_{\text{int}} = 36 \text{ fb}^{-1}$ , Vis 2  
PRL 121 (2018) 221801

$\sigma_{tX} [\text{fb}]$

200 300 400 500 600 700 800 900