




Run2

138 fb<sup>-1</sup> (13 TeV) $c_{\phi\phi}$ **CMS***Private Work***negative ALP-SM interference**

----- Expected 95% CL upper limit

 Expected  $\pm 1\sigma$  Expected  $\pm 2\sigma$ 

- - - - - Expected 95% CL upper limit (PRD 104, 092013)

 Expected  $\pm 1\sigma$  (PRD 104, 092013) Expected  $\pm 2\sigma$  (PRD 104, 092013) Observed (PRD 104, 092013)10<sup>3</sup>10<sup>2</sup>

10

1

2

4

6

8

10

 $f_a$  [TeV]