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# The CMB Lensing Imprint of Cosmic Voids

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Cosmic voids gravitationally lens the cosmic microwave background(CMB). This weak lensing shows itself as negative convergence( $\kappa$ ) imprint on the CMB lensing map. We use one of the largest available sky surveys(Dark Energy Survey Y3) and Planck 2018 CMB lensing map along with a simulated CMB lensing convergence map from the MICE N-body simulation to calibrate our detection. We stack void centre positions on the CMB map and use a matched filtered approach(that has been used before for BOSS spectroscopic voids) to further optimise our S/N. By using 2 different void types, we measure the lensing imprint of CMB by voids up to  $S/N = 4.56\sigma$  for DES Y3. We find that both types of voids show slightly weaker CMB lensing signal than Lambda-CDM expectations as calibrated by MICE N-body simulation. Our result is consistent with another DES Y3 study which uses another method(Kovacs et al, in prep) and also with DESI Imaging Survey DR8 study( Hang et al,2021). We discuss possible reasons for this finding.

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