







# DARK ENERGY SPECTROSCOPIC INSTRUMENT

U.S. Department of Energy Office of Science

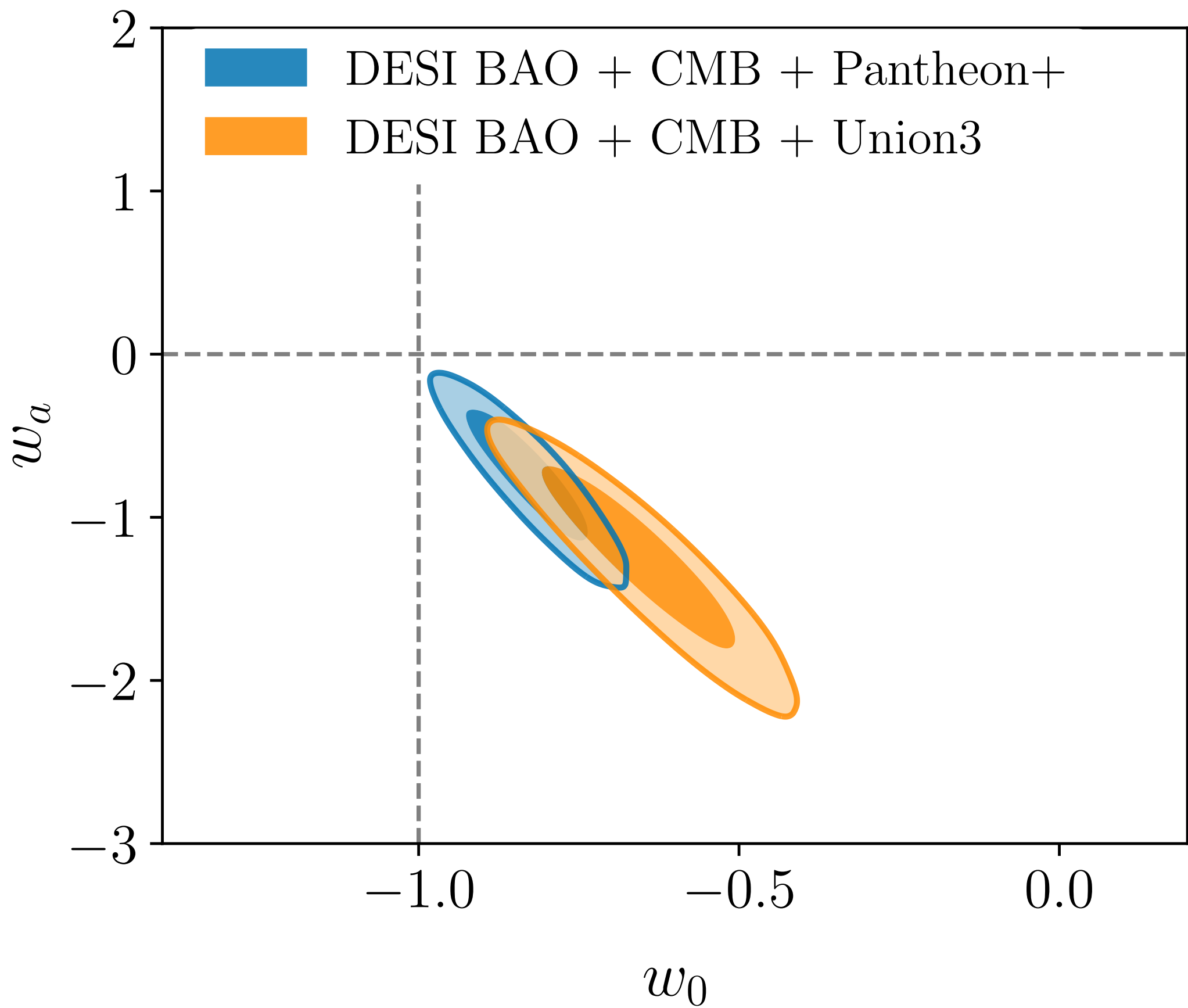
DESIGN LOGICAL CONSTRAINTS - Aug 24 XIICNFP@Crete, Greece, 2024

UdendentAndrade (UMichian)

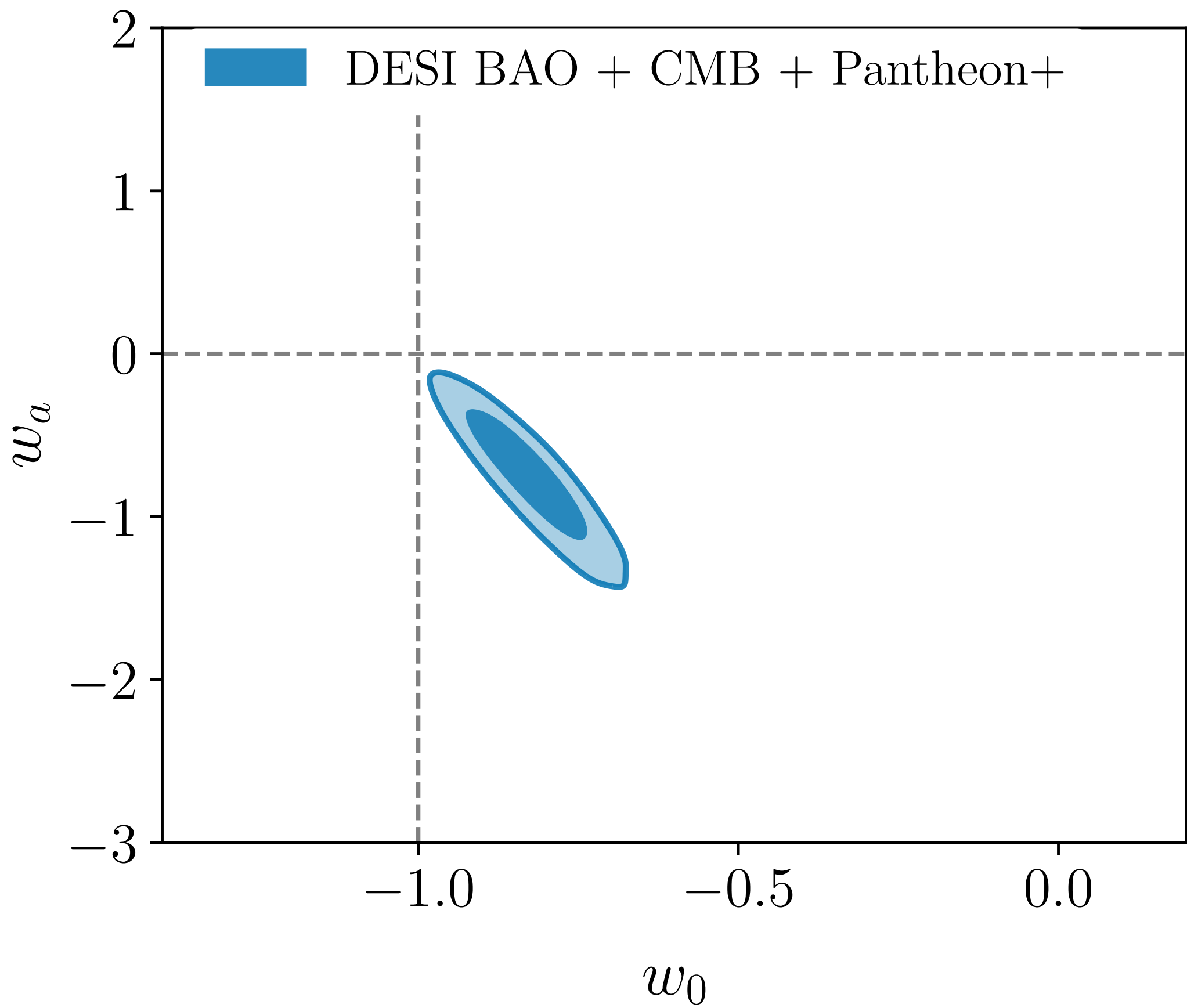


3

8







$w_0 > -1$ ,  $w_a < 0$  favored





**DESI + CMB + PantheonPlus  $\Rightarrow 2.5\sigma$**







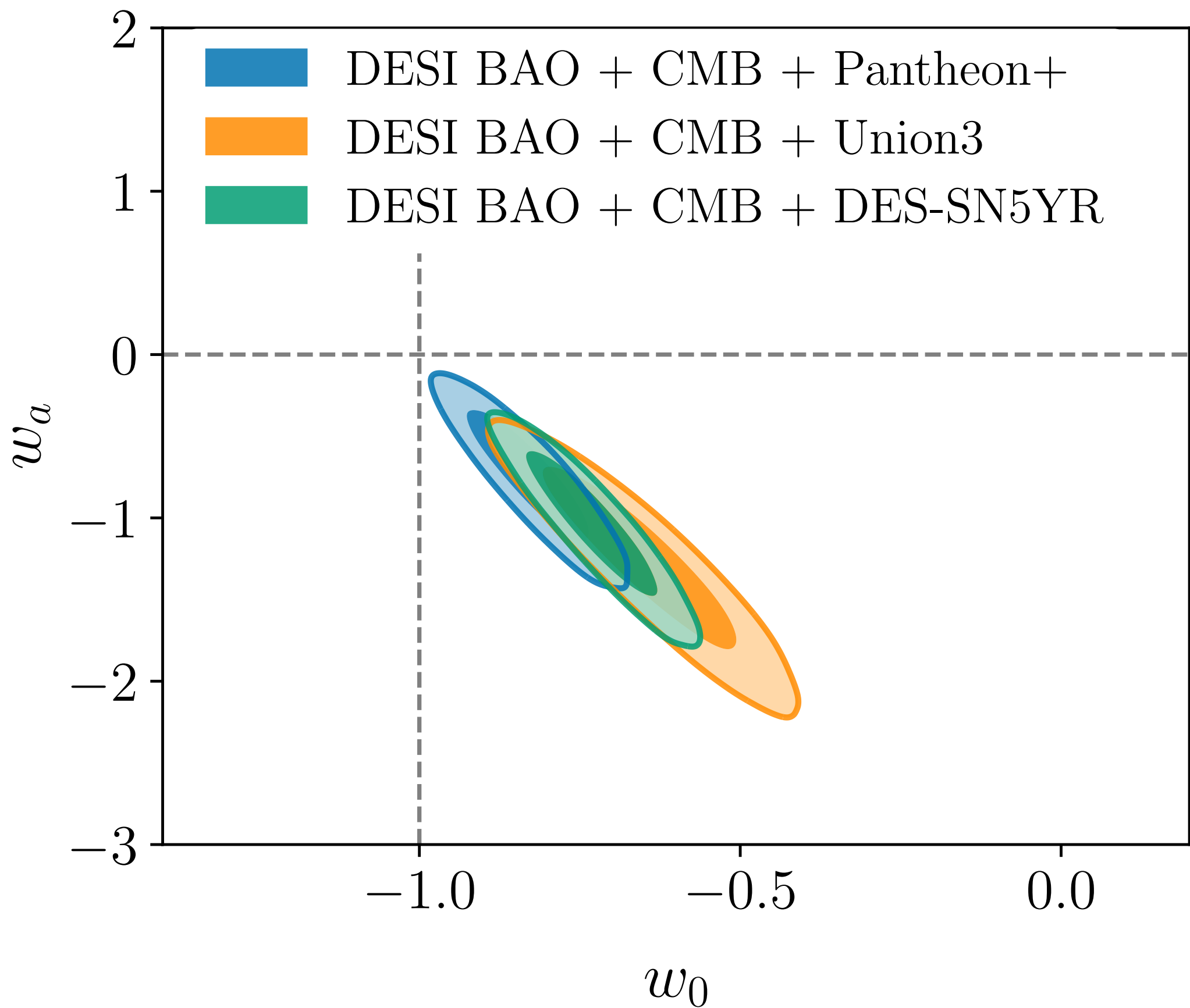


DES1 + CMB + Union3  $\Rightarrow 3.5\sigma$





**DESI + CMB + DES-SN5YR  $\Rightarrow$   $3.9\sigma$**



# Dark Energy Equation of State

Combining all DESI + CMB + SN

$$w_0 = -0.827 \pm 0.063, \quad w_a = -0.75^{+0.29}_{-0.25}$$

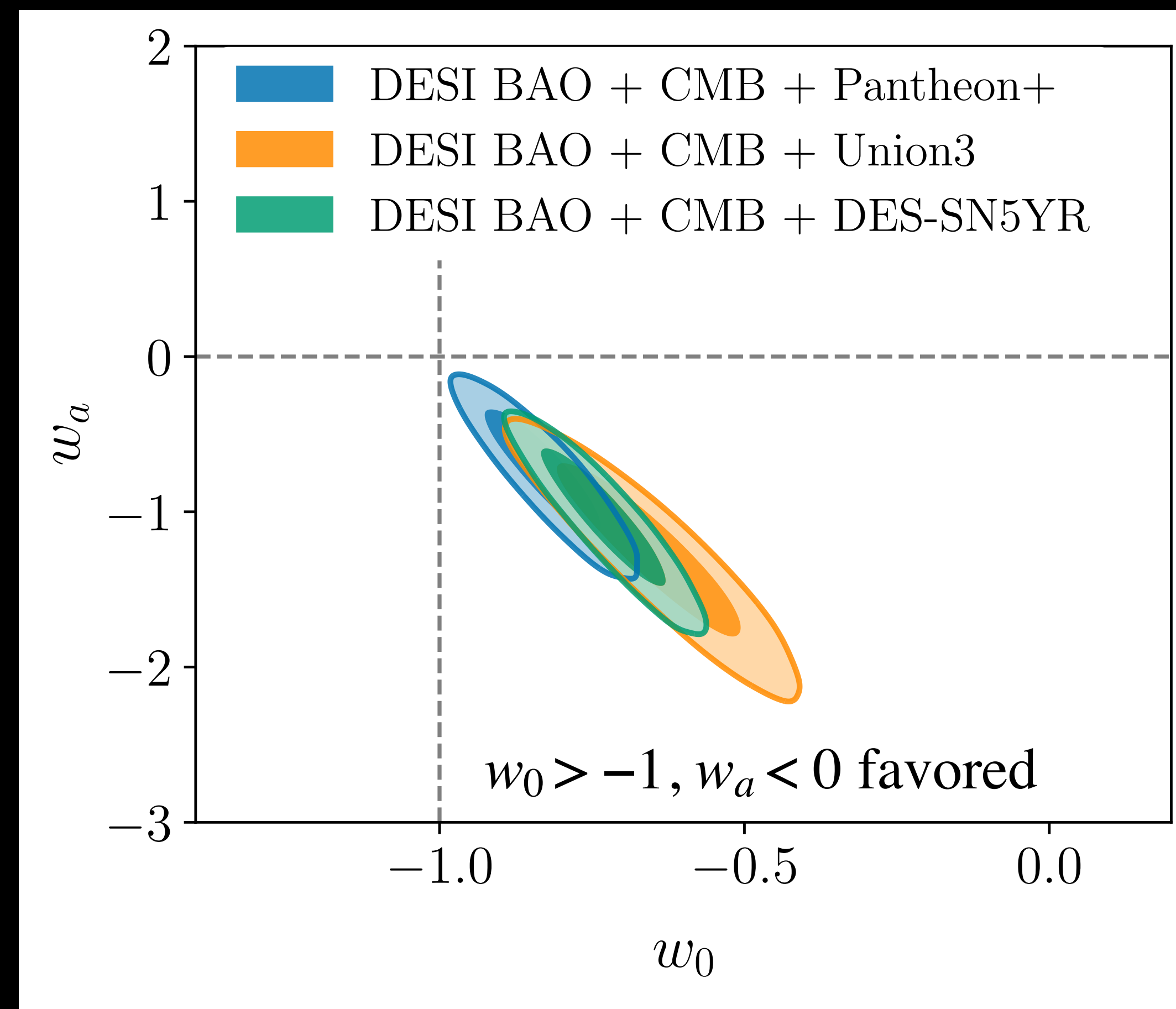
**DESI + CMB + PantheonPlus  $\Rightarrow 2.5\sigma$**

$$w_0 = -0.64 \pm 0.11, \quad w_a = -1.27^{+0.40}_{-0.34}$$

**DESI + CMB + Union3  $\Rightarrow 3.5\sigma$**

$$w_0 = -0.727 \pm 0.067, \quad w_a = -1.05^{+0.31}_{-0.27}$$

**DESI + CMB + DES-SN5YR  $\Rightarrow 3.9\sigma$**



# Neutrinos in cosmology