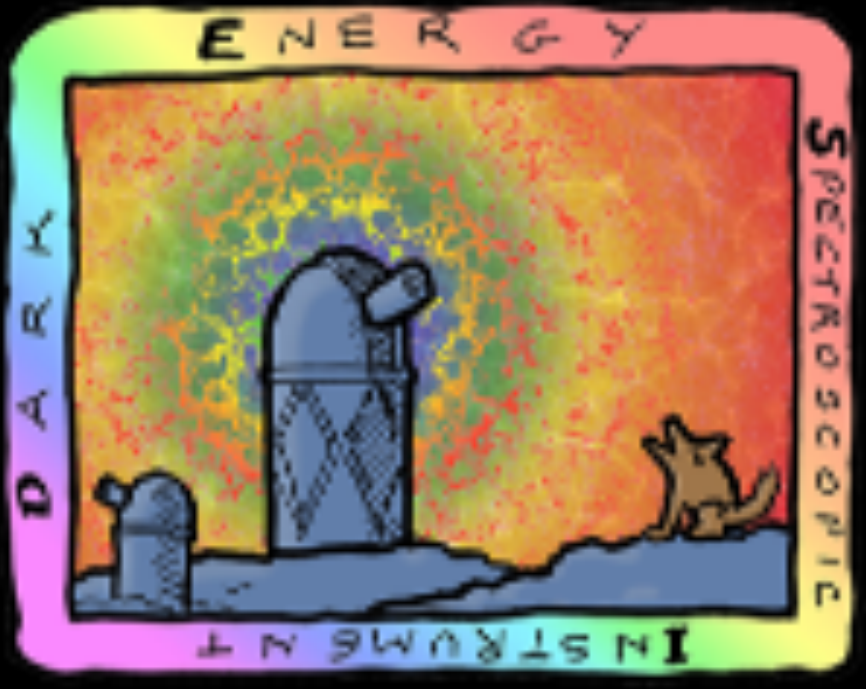

DARK ENERGY SPECTROSCOPIC INSTRUMENT

U.S. Department of Energy Office of Science

DESI VI. Cosmological constraints - Aug 2024 XII ICNFP @ Crete, Greece, 2024

Uendert Andrade (UMichigan)

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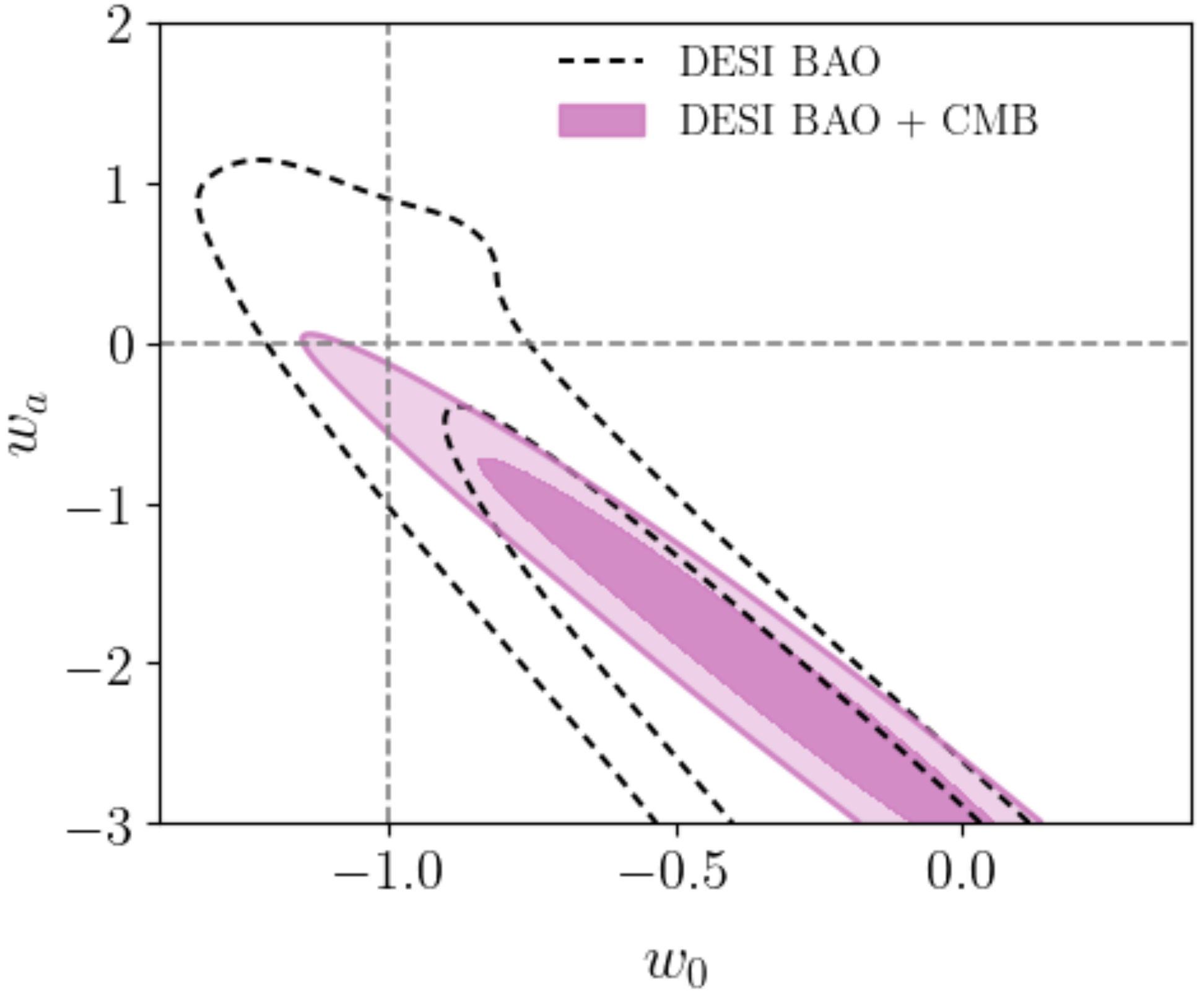
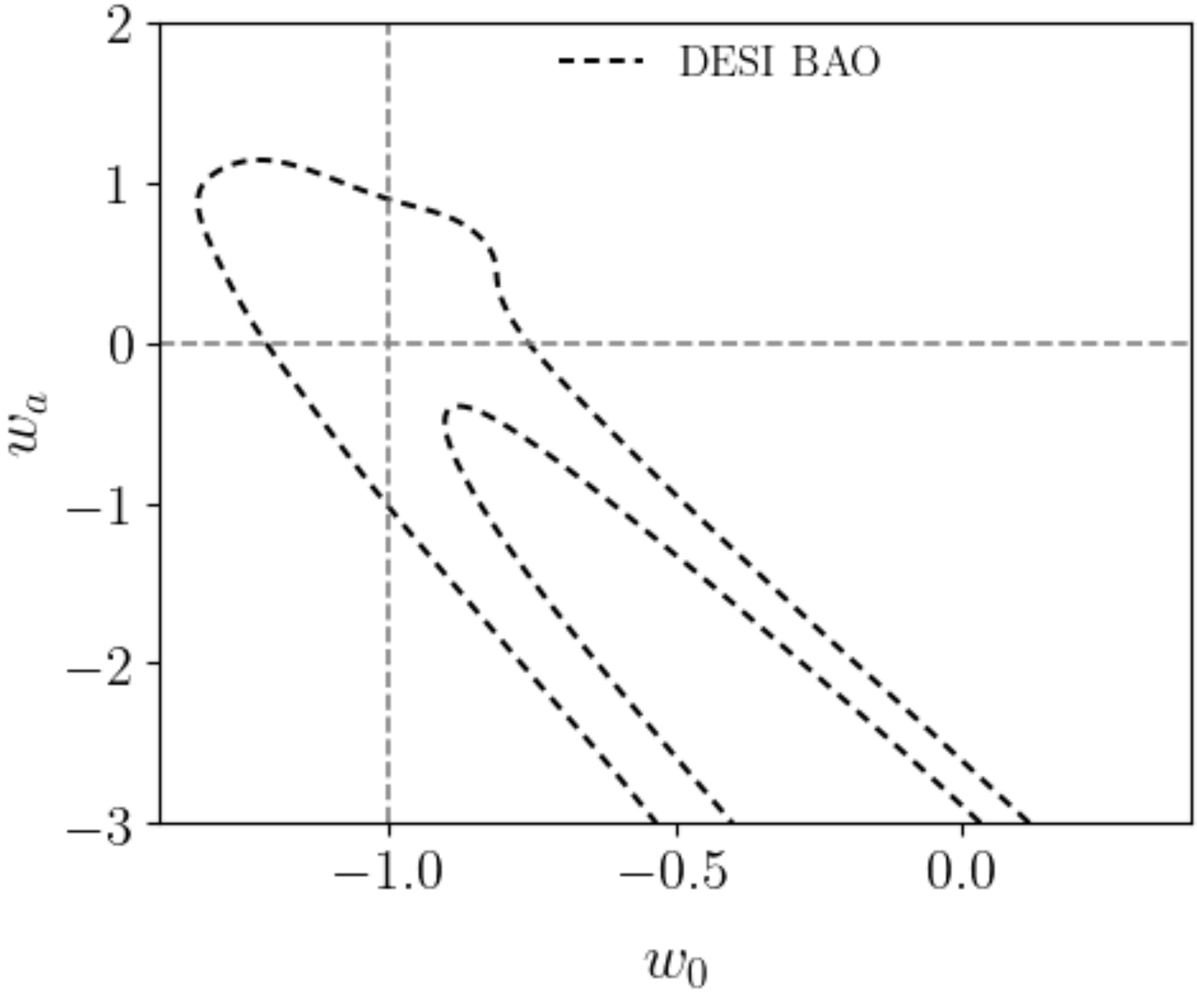
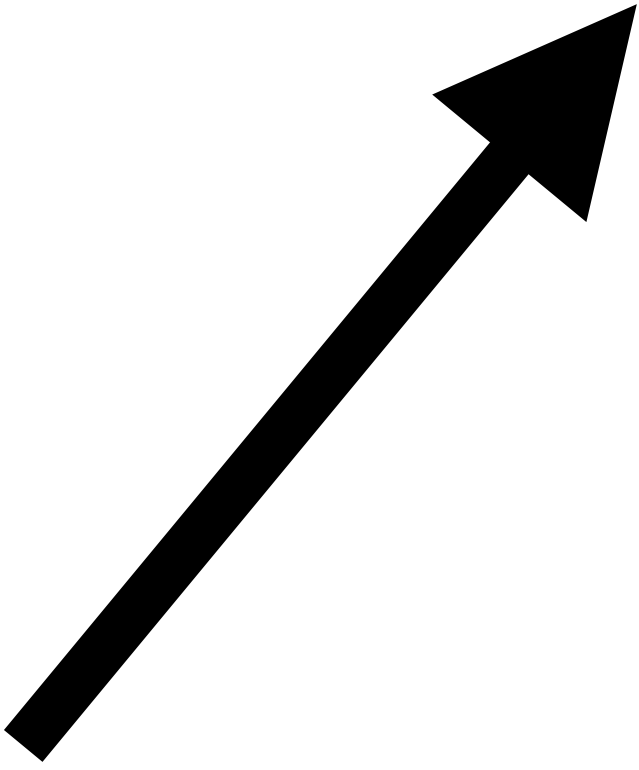
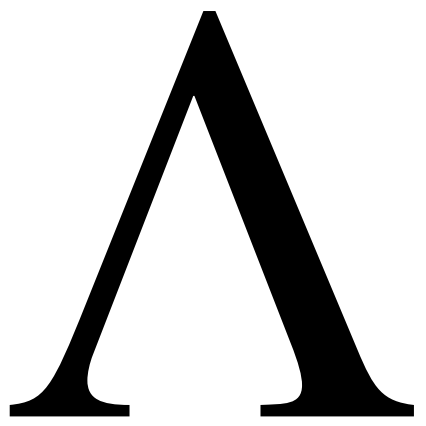
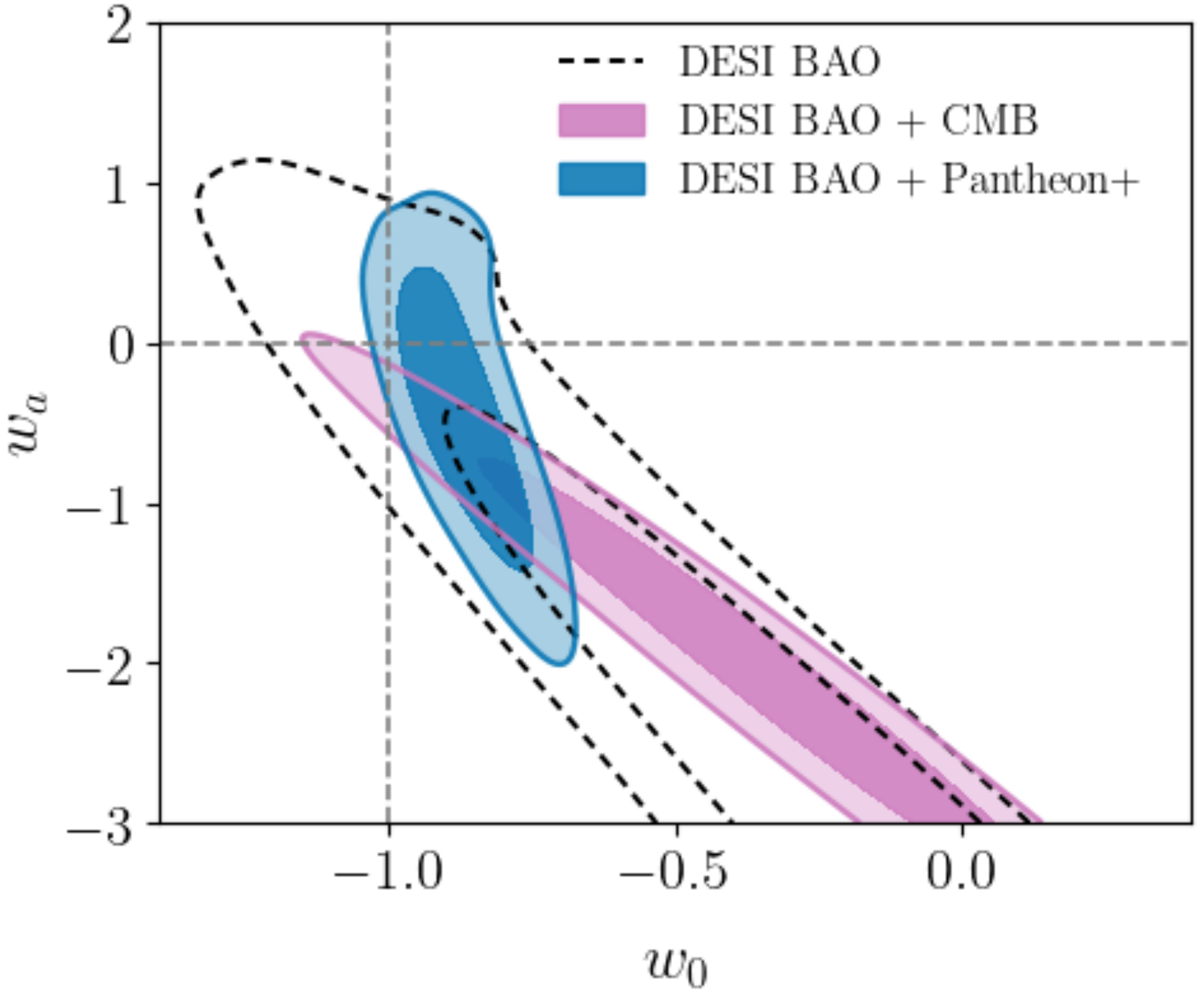

DESI BAO
DESI BAO + CMB
2
1
0
−1
−2
−3
w_a
−1.0
−0.5
0.0
w_0

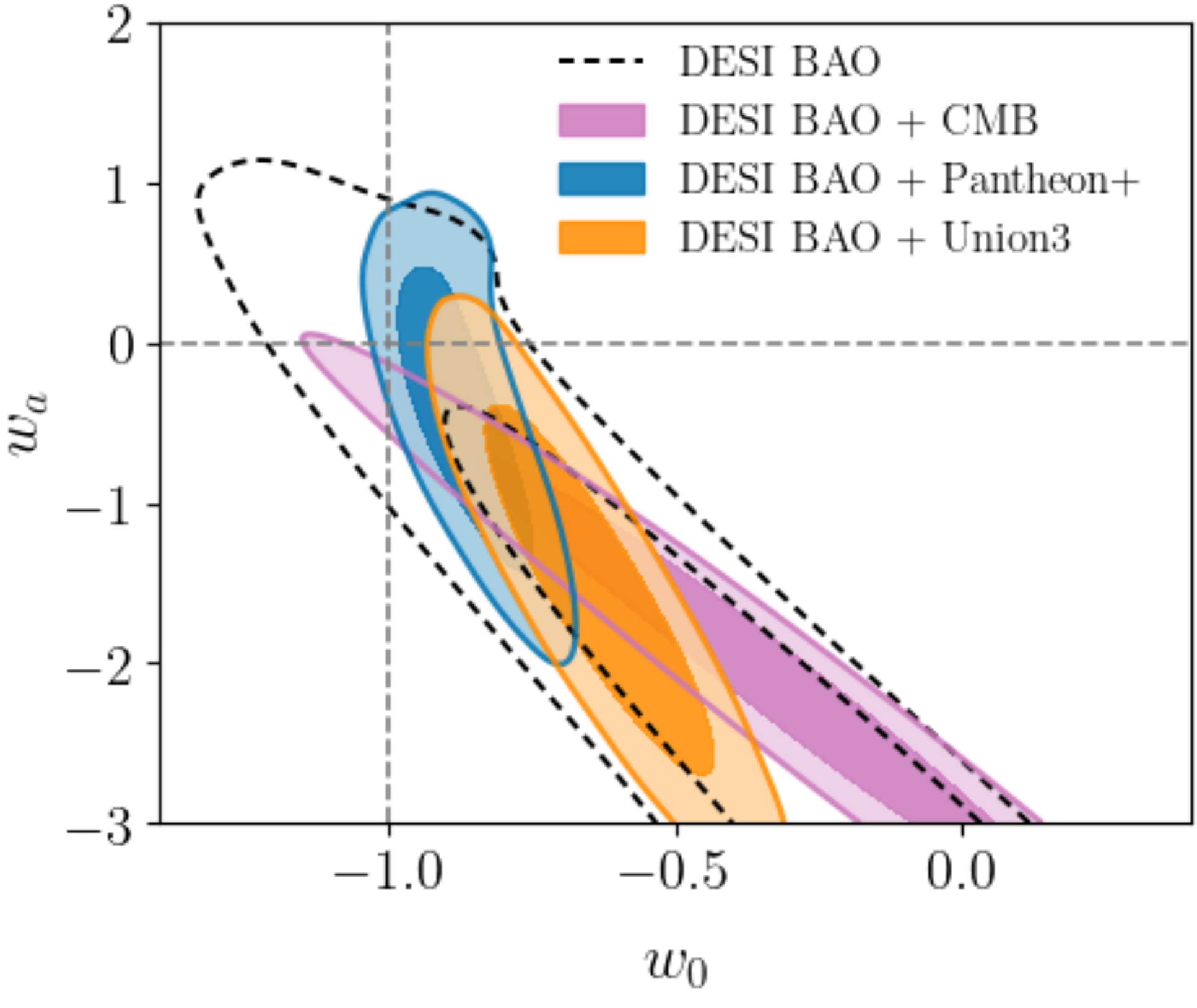

DESI BAO
2
1
0
−1
−2
−3
w_a
−1.0
−0.5
0.0
w_0

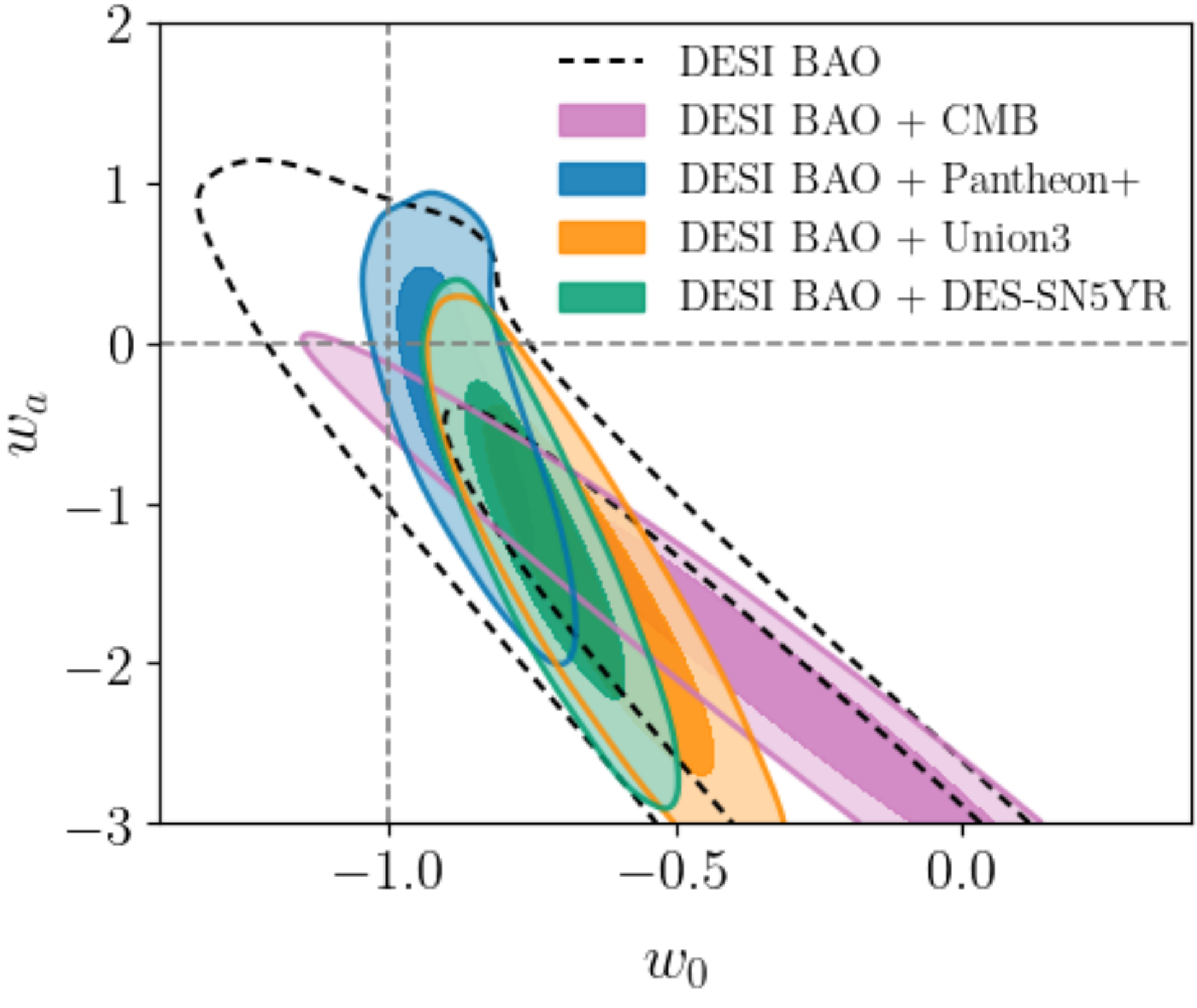
DESI + CMB $\Longrightarrow$ 2.6σ






DESI BAO
DESI BAO + CMB
DESI BAO + Pantheon+
2
1
0
−1
−2
−3
w_a
−1.0
−0.5
0.0
w_0


DESI BAO
DESI BAO + CMB
DESI BAO + Pantheon+
DESI BAO + Union3
2
1
0
−1
−2
−3
w_a
−1.0
−0.5
0.0
w_0


DESI BAO
DESI BAO + CMB
DESI BAO + Pantheon+
DESI BAO + Union3
DESI BAO + DES-SN5YR
2
1
0
−1
−2
−3
w_a
−1.0
−0.5
0.0
w_0

DARK ENERGY SPECTROSCOPIC INSTRUMENT

U.S. Department of Energy Office of Science

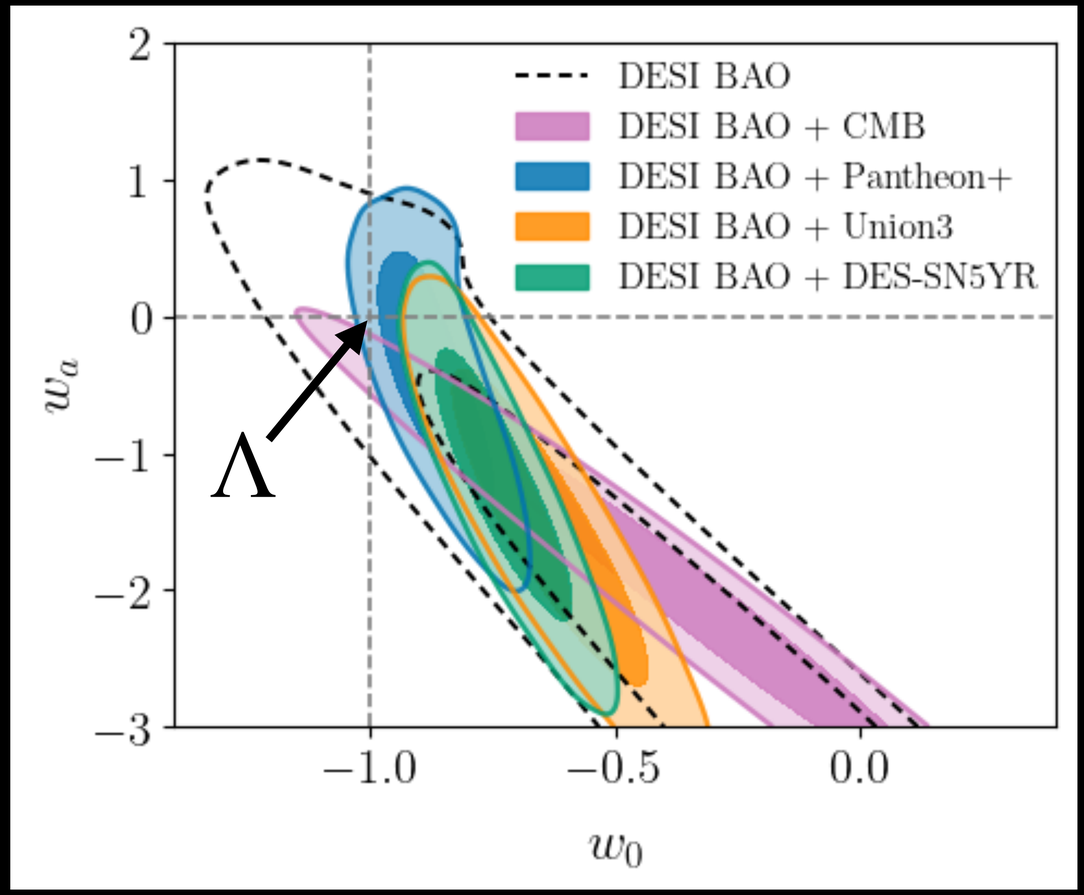
Dark Energy Equation of State

Varying EoS

$$w(a) = w_0 + (1 - a)w_a \qquad \text{(CPL)}$$

$$w_0 = -0.45^{+0.34}_{-0.21}, \qquad w_a = -1.79^{+0.48}_{-1.00}$$

DESI + CMB $\Longrightarrow$ 2.6σ

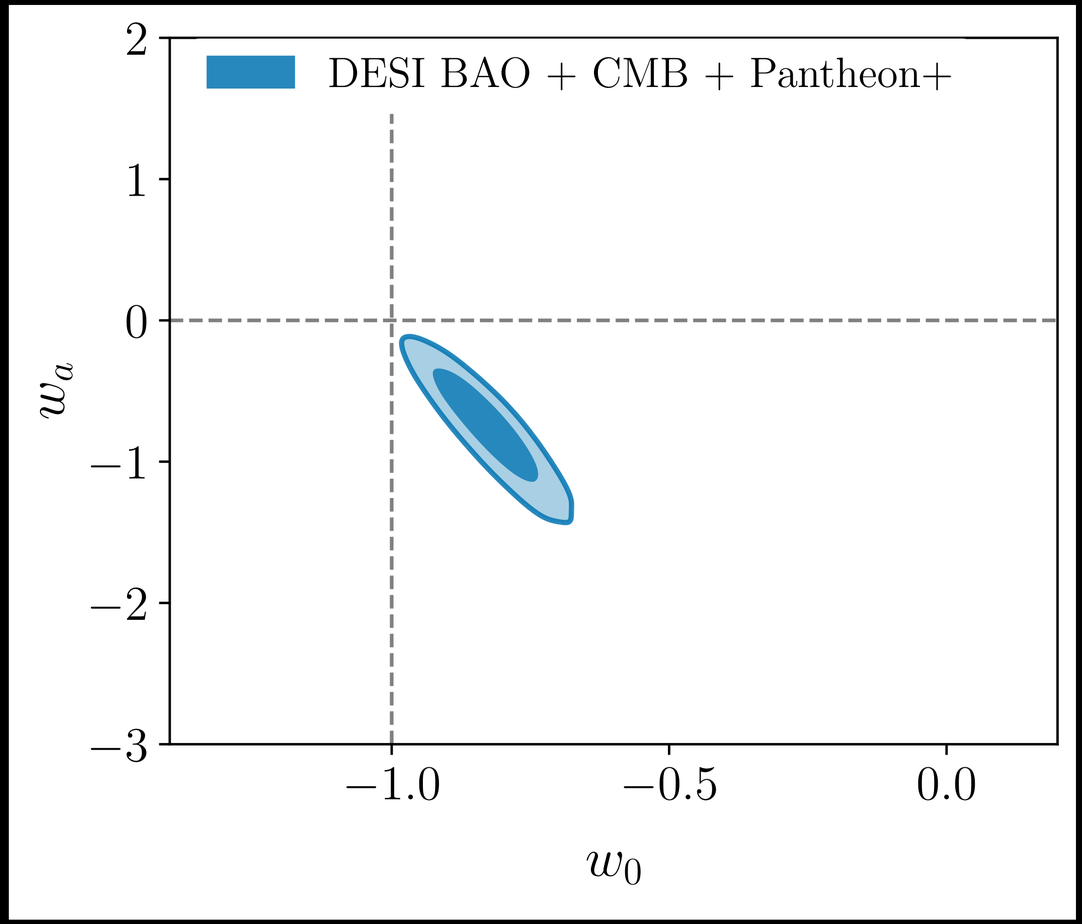


DARK ENERGY SPECTROSCOPIC INSTRUMENT

U.S. Department of Energy Office of Science

Dark Energy Equation of State

Combining all DESI + CMB + SN

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

DESI + CMB + PantheonPlus $\Longrightarrow 2.5\sigma$