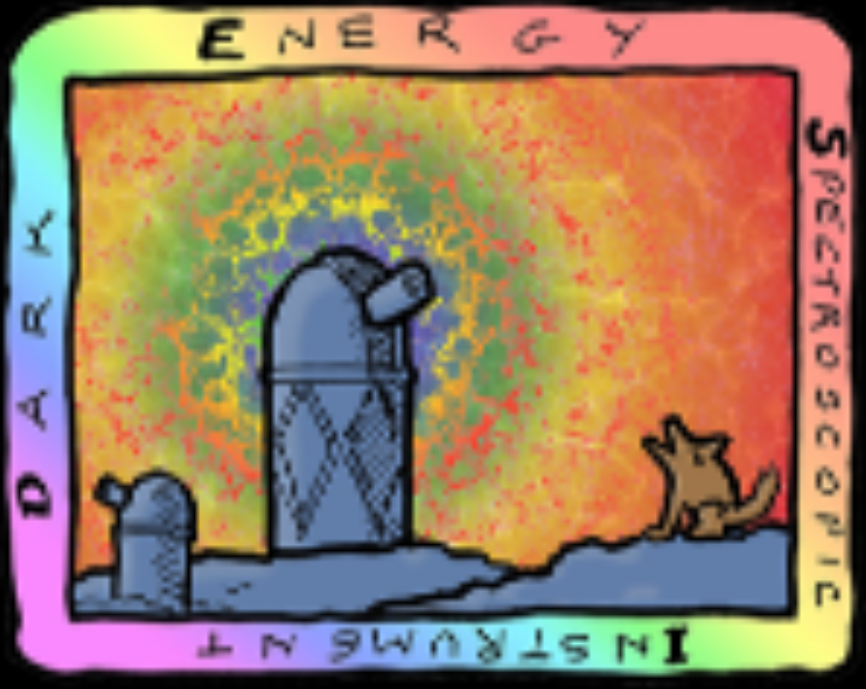

DARK ENERGY SPECTROSCOPIC INSTRUMENT

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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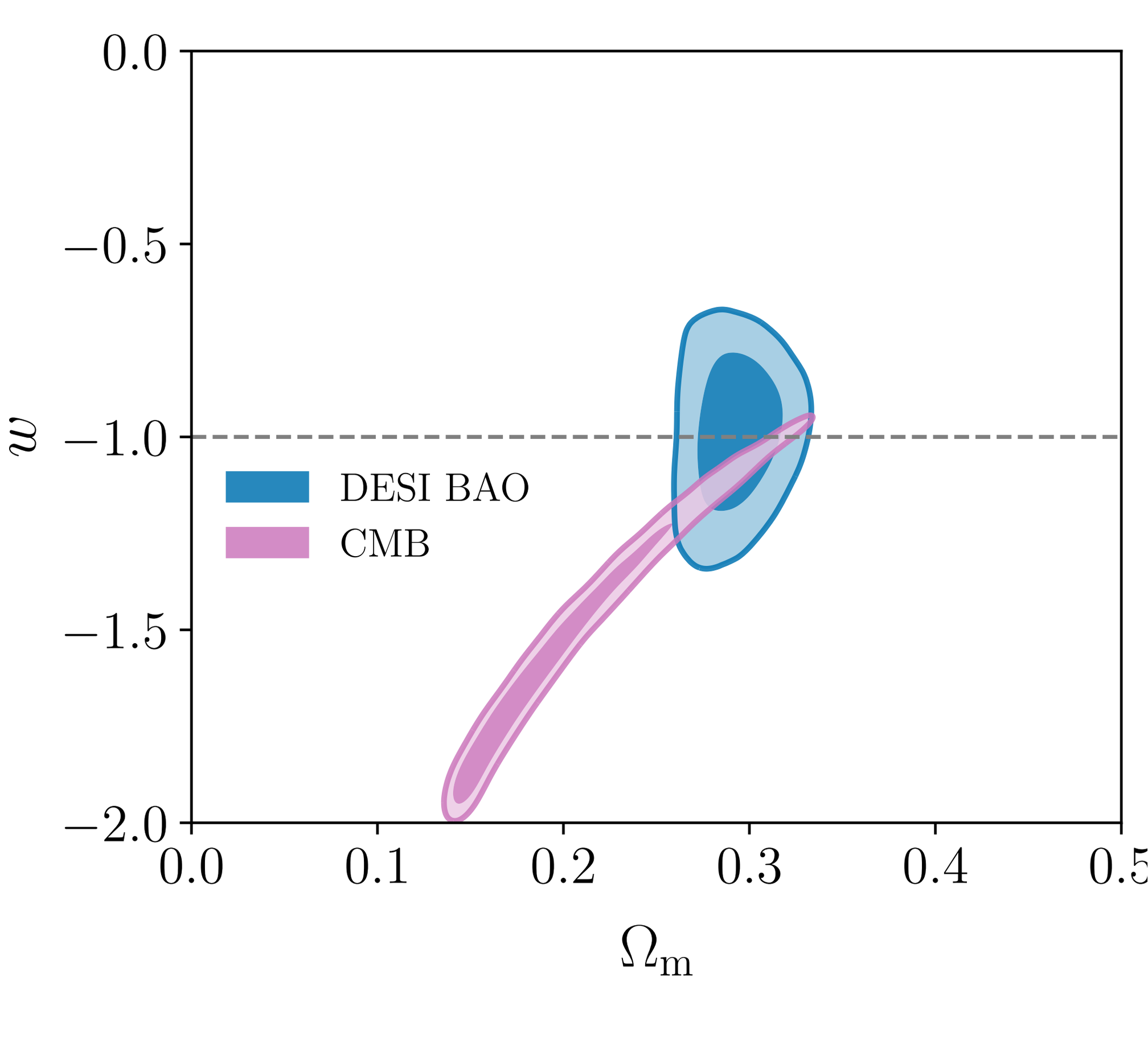
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w
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CMB
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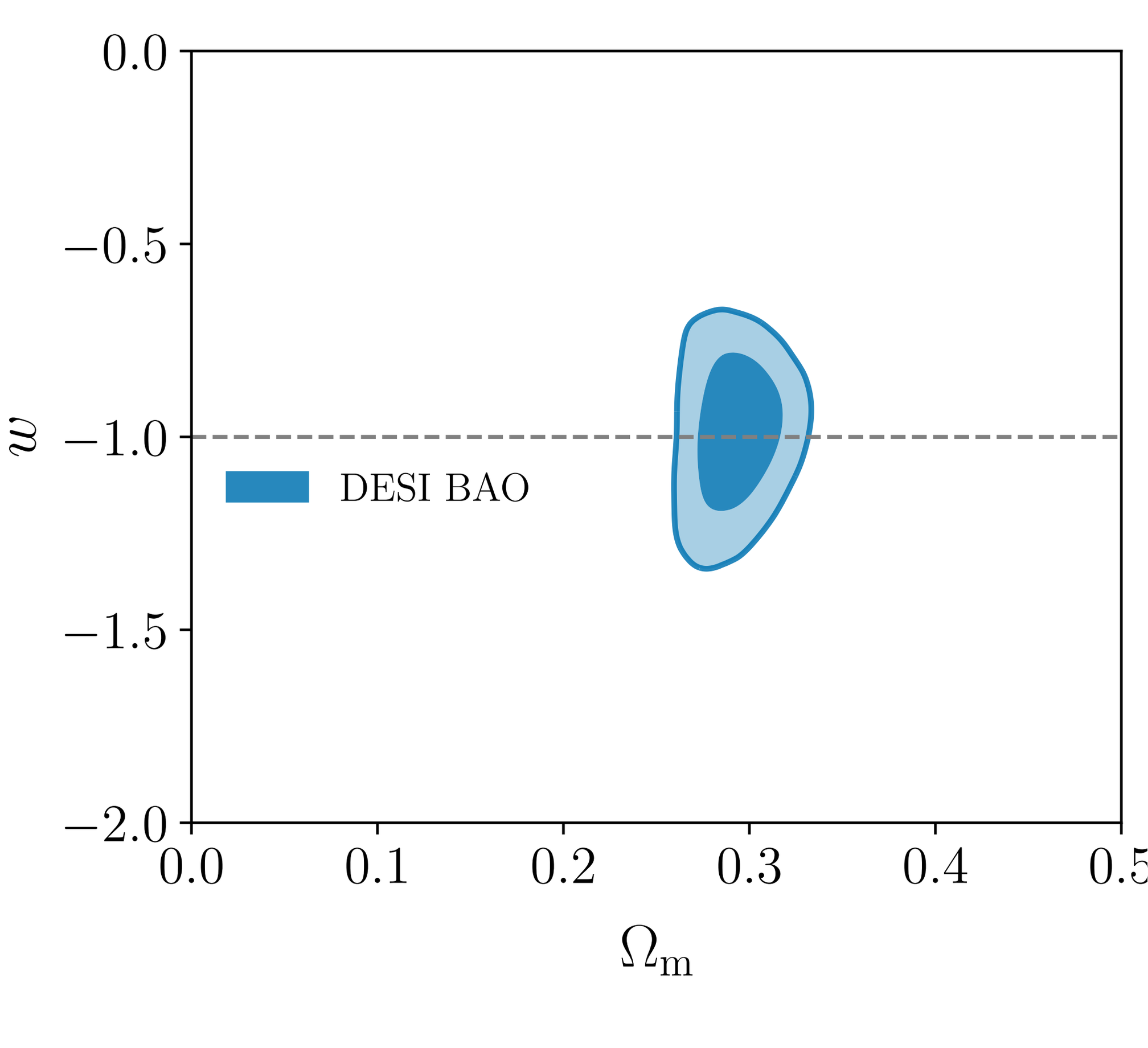
0.3
0.4
0.5
Ω_{m}


0.0
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w
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0.0
0.1
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0.5
Ω_{m}

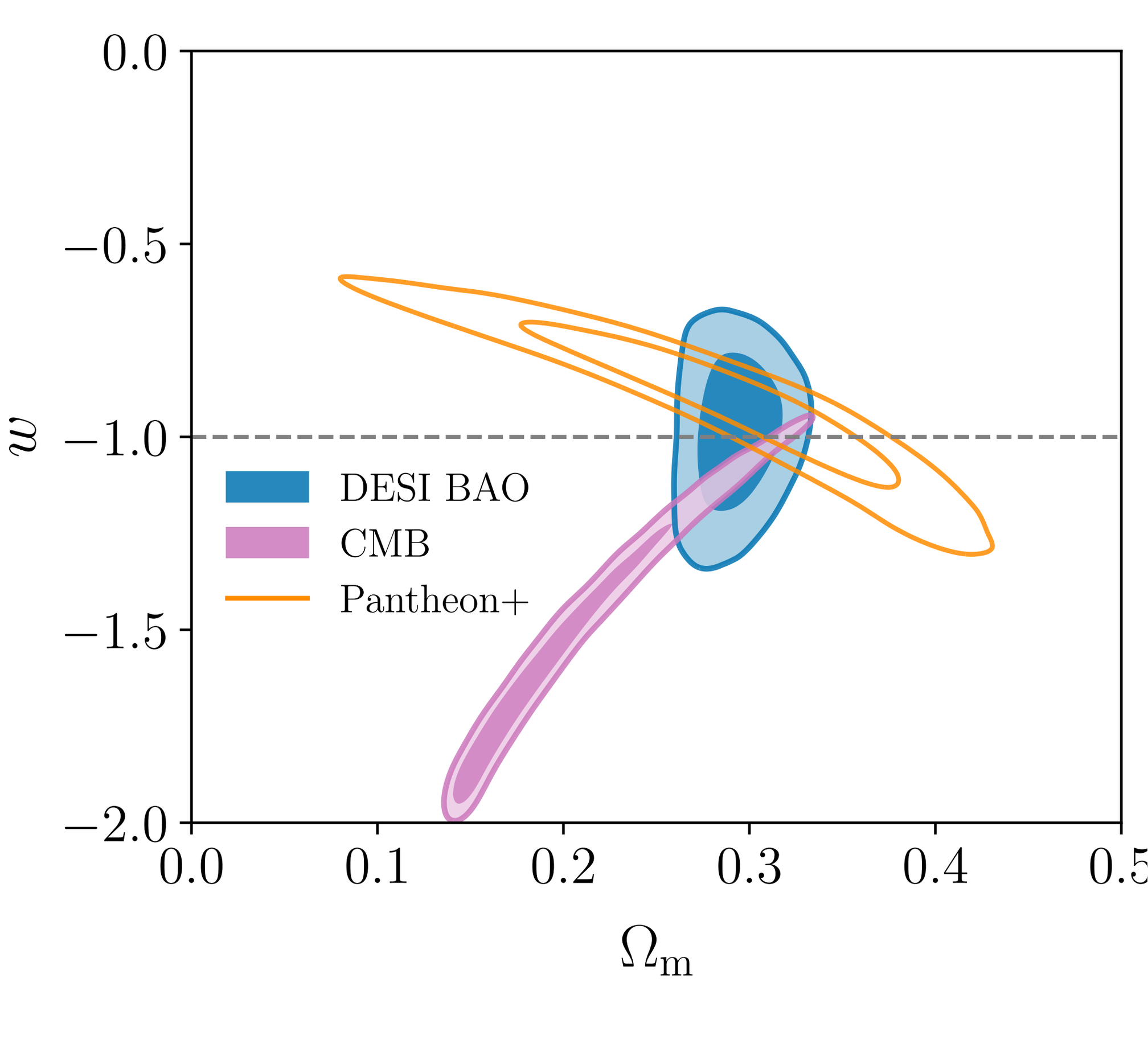

DESI

DESI+CMB+PantheonPlus

PantheonPlus

Union3

DES-SN5YR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w
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0.3
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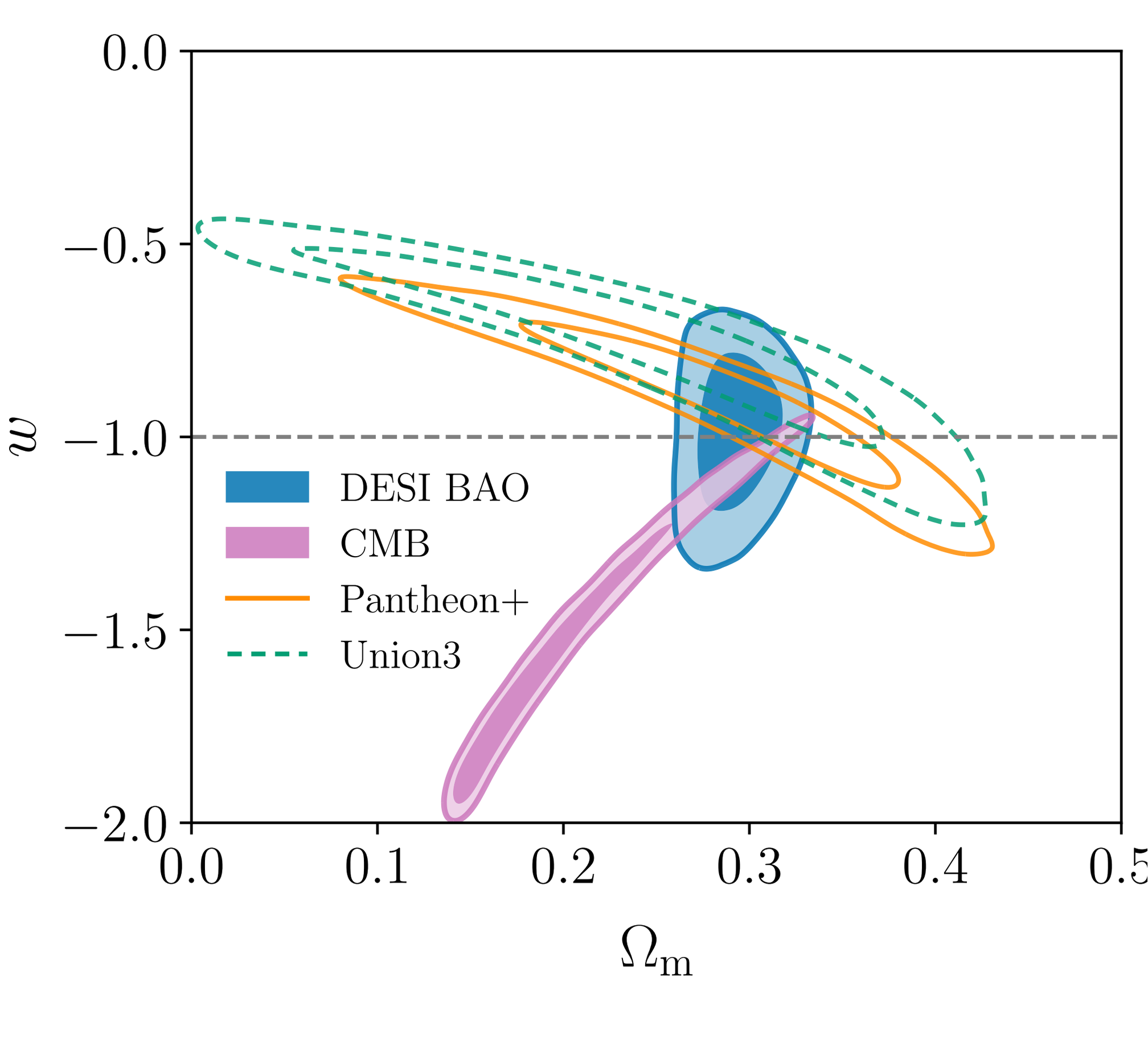
Ω_{m}
DESI BAO
CMB
Pantheon+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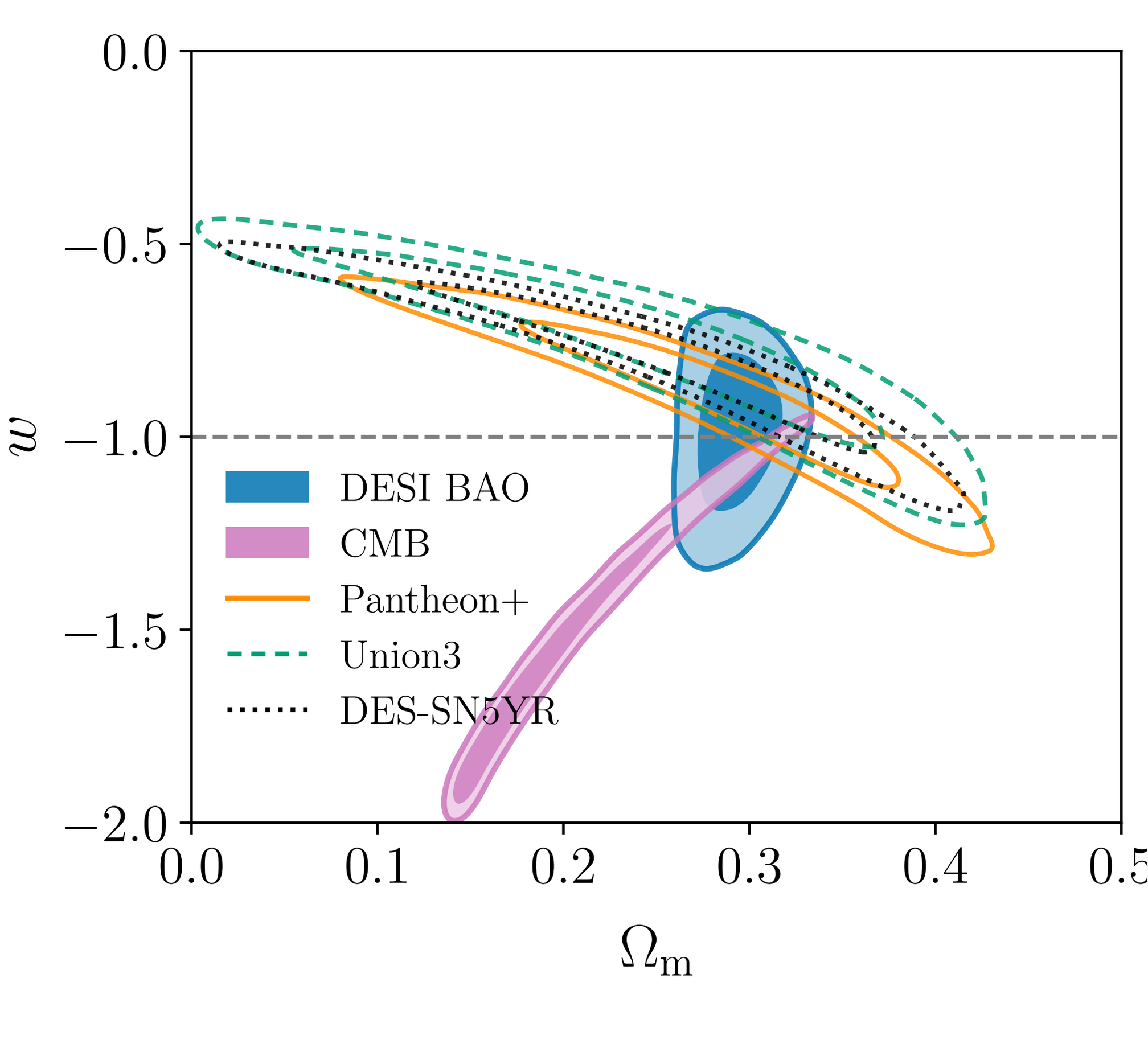
0.5
Ω_{m}
DESI BAO
CMB
Pantheon+
Union3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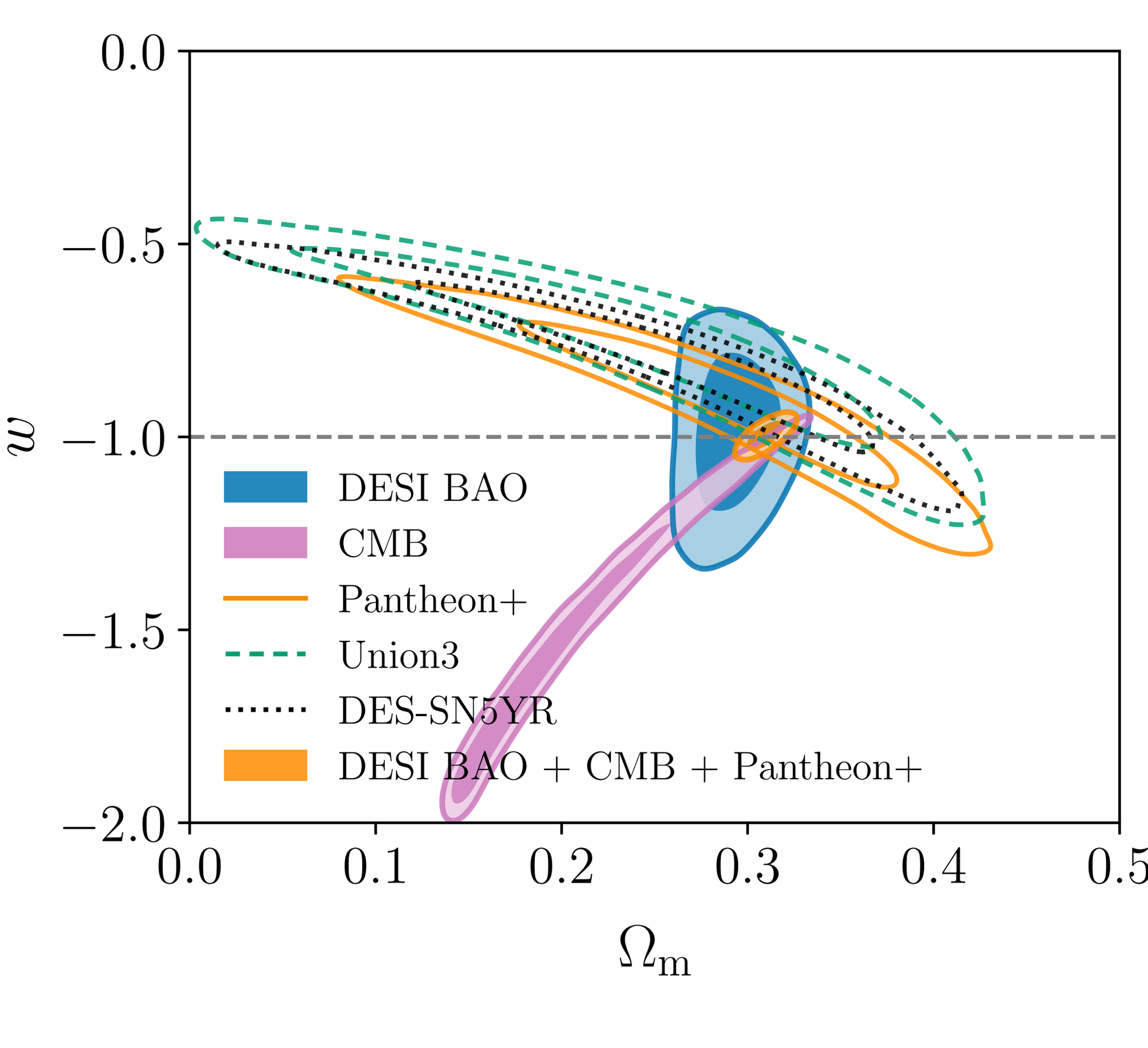
Ω_{m}
DESI BAO
CMB
Pantheon+
Union3
DES-SN5YR


0.0
−0.5
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−1.5
−2.0
w
0.0
0.1
0.2
0.3
0.4
0.5
Ω_m
DESI BAO
CMB
Pantheon+
Union3
DES-SN5YR
DESI BAO + CMB + Pantheon+

DARK ENERGY SPECTROSCOPIC INSTRUMENT
U.S. Department of Energy Office of Science

Dark Energy Equation of State

Constant EoS parameter w

$\Omega_m = 0.295 \pm 0.15$ (5.1%)

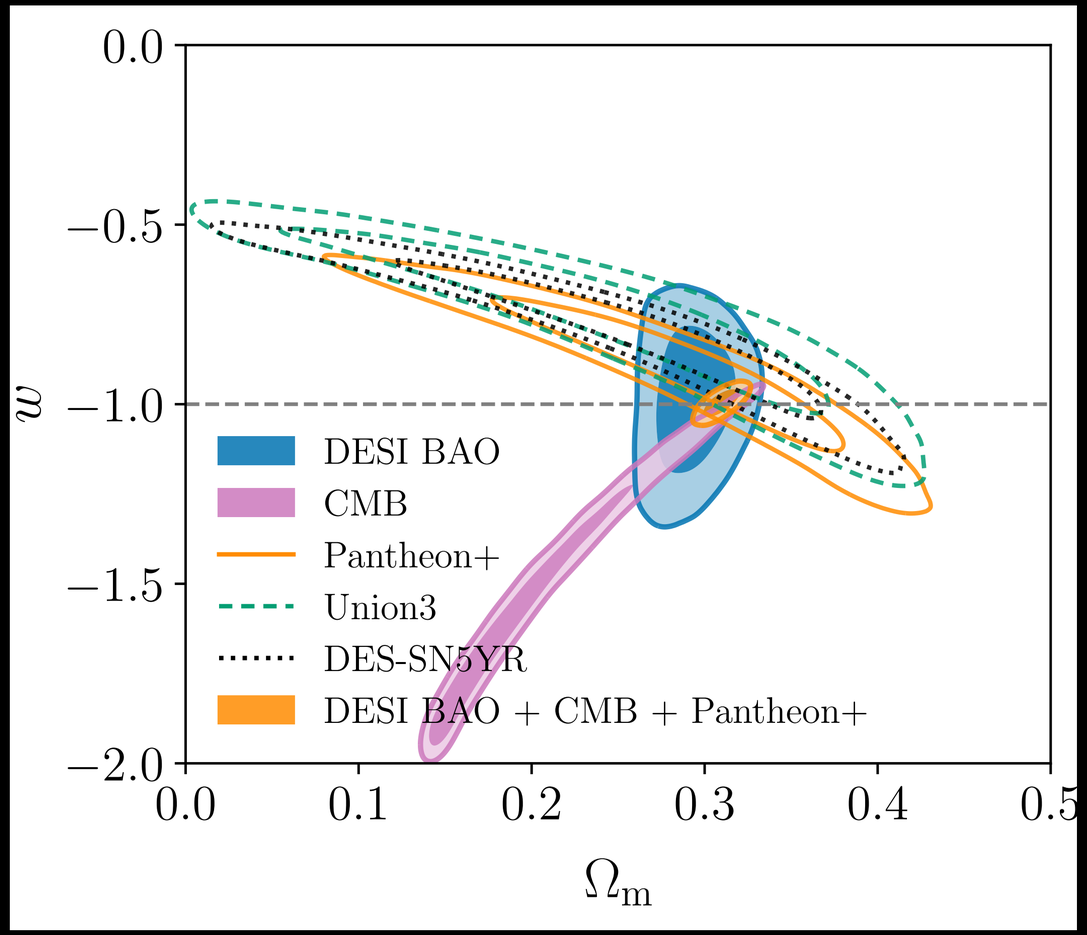
$w = -0.99^{+0.15}_{-0.13}$ (15%)

DESI

$\Omega_m = 0.295 \pm 0.15$ (2.1%)

$w = -0.99^{+0.15}_{-0.13}$ (2.5%)

DESI+CMB+PantheonPlus



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