

Alleviating Hubble Tension with Torsion Condensation

TorC Lagrangian

Torsion Condensation (TorC):

$$\mathcal{L} \propto R^2 + T^2$$

[2003.02690]

Curvature and Torsion

TorC parameters | GR-coincident

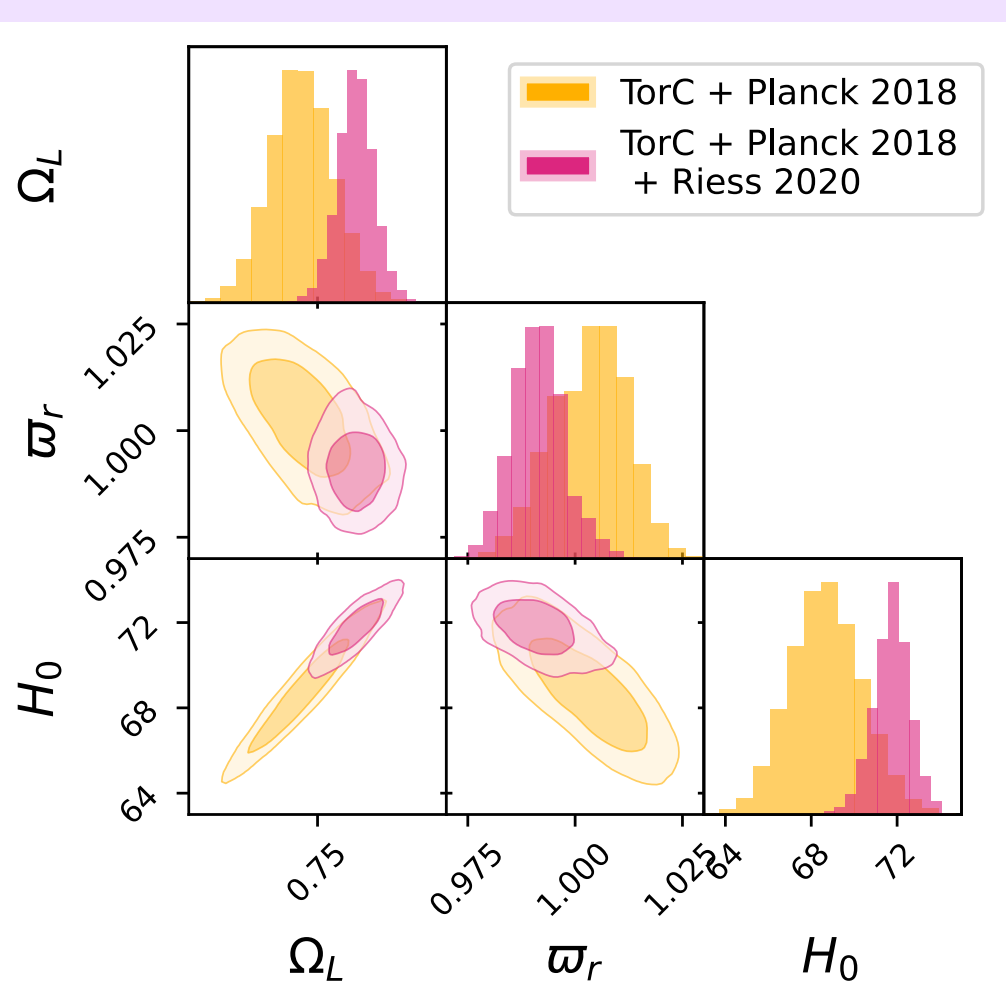
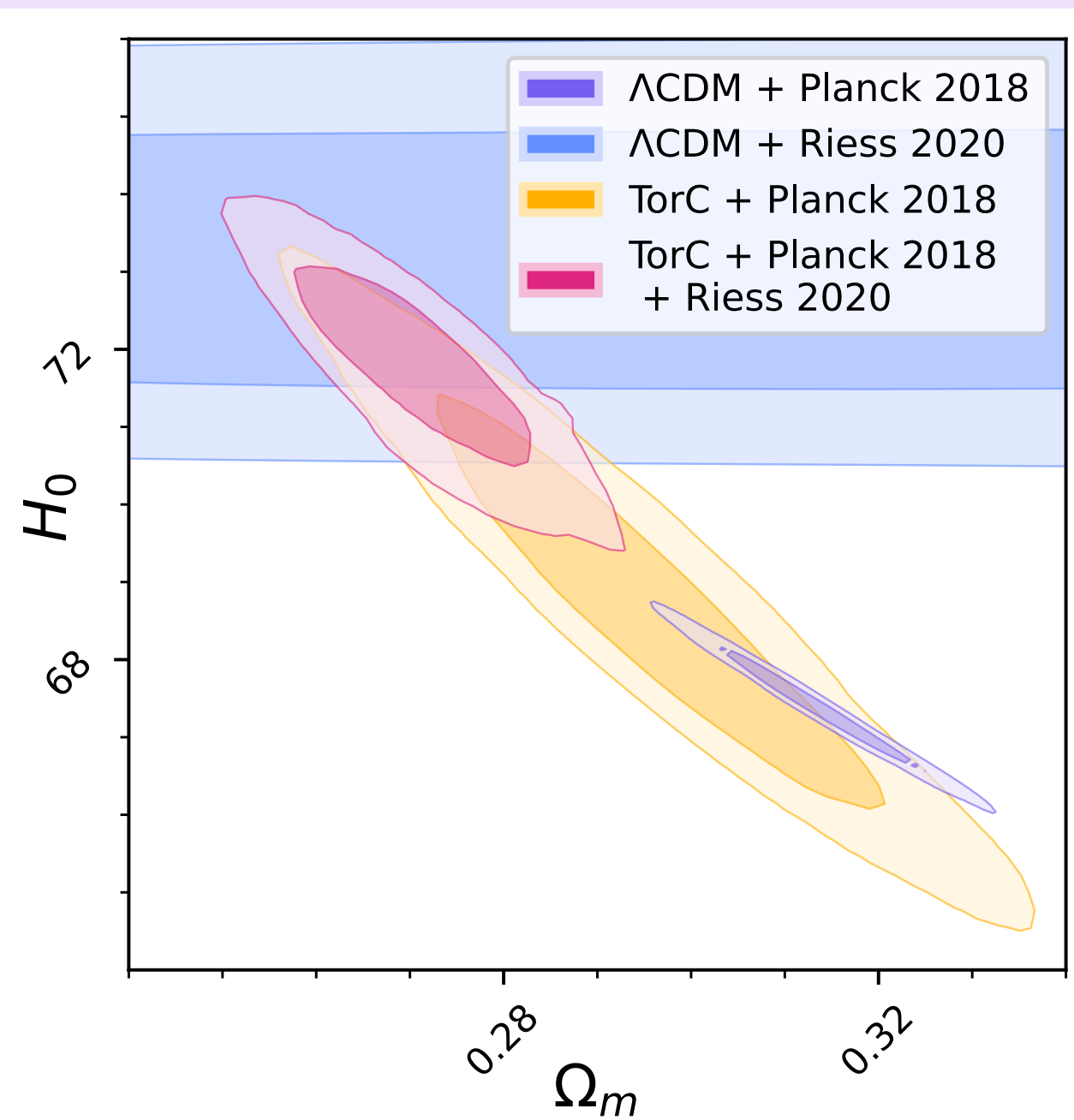
ϖr : Initial value of torsion scalar field ϖ .

$$\varpi r = 1$$

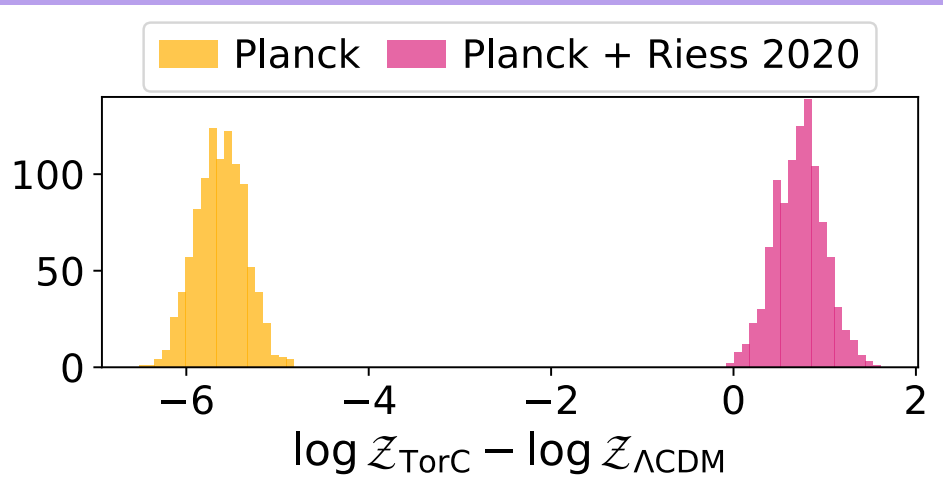
Ω_L : bare dark energy density parameter

$$\Omega_L = \Omega_\Lambda$$

Posterior Result



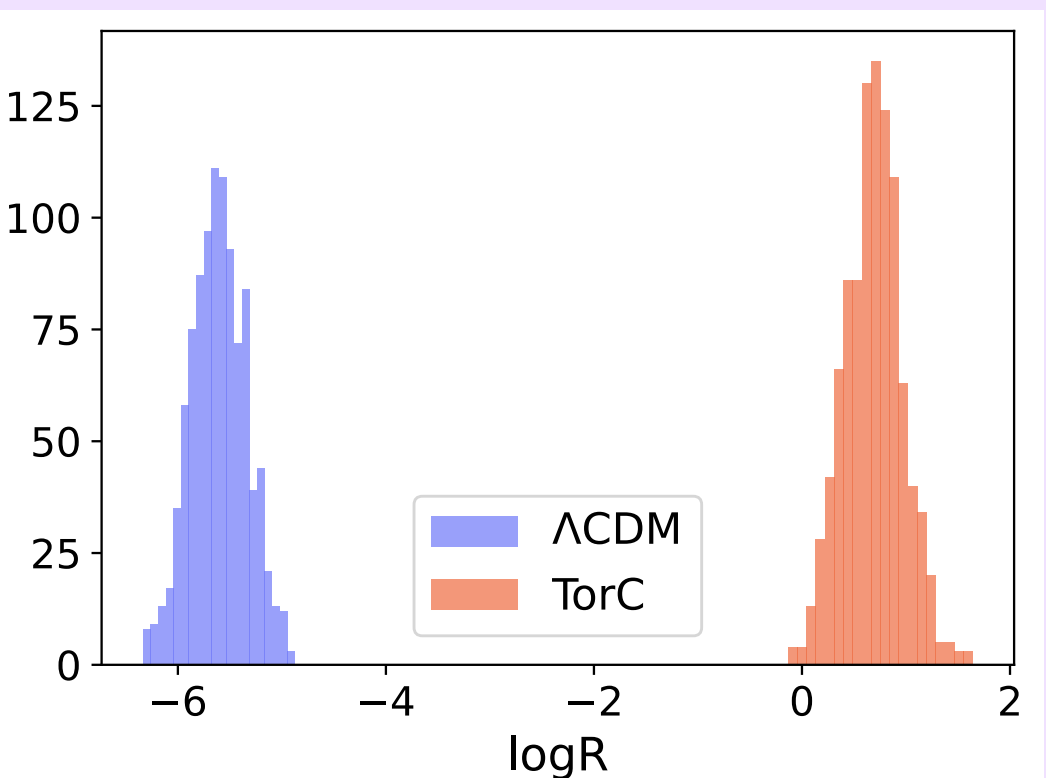
TorC with Planck dataset is consistent with SH0ES measurement



Model comparison with Bayes factor

Tension is alleviated, but model is not decisively favoured

Tension Analysis



$$R = \frac{\mathcal{Z}_{AB}}{\mathcal{Z}_A \mathcal{Z}_B} = \frac{P(A, B)}{P(A)P(B)} = \frac{P(A|B)}{P(A)} = \frac{P(B|A)}{P(B)}$$

$R \gg 1$: indicates that B strengthen confidence in A by a factor of R

$R \ll 1$: indicates Tension

Quantifies the alleviation of H_0 Tension