

6.) What is the prospect to solve this inconsistency?

[7, p. 4-5]

Two standing questions have been discussed extensively:

1) Do we live in an underdense local void or bubble?

Wu & Huterer (2017): In a detailed numerical simulation, this effect would result in a difference of $\pm 0.37 \frac{\text{km}}{\text{sMpc}}$.
The existence of a void that big that it would matter in the Λ CDM model is extremely unlikely.

2.) Effect of weak lensing on the SNe Ia measurements?

- ↳ Can weak lensing affect the dispersion of SNe Ia magnitudes as distant SNe Ia are lensed by matter along the line of sight
 - ↳ This effect, of magnifying or dimming, will increase with increasing redshift (longer path lengths)
- ⇒ Again, this effect would be way too small

So... maybe there is physics beyond the 6-parameter Λ CDM model or the standard model of particle physics?

Evolution of the dark energy equation of state?
Increase in the energy density of radiation in the early universe?