

**Big-Bang Cosmology**

**Inflation**

**Big-Bang Nucleosynthesis**

**The Cosmological Parameters**

**Dark Matter**

**Dark Energy**

**Cosmic Microwave Background**

**Neutrinos in Cosmology**

**Experimental Tests of Gravitational Theory**

Strong team effort-from all participating authors

**Cosmic Rays**

# Minor Changes

**Big Bang Cosmology, Inflation, and CMB**

**Planck results (2018) were already included, but updates included new cosmological parameter determinations.**

**Most reviews underwent relatively moderate changes.**

## BBN

Fields, Molaro, Sarkar

Included new results from LUNA on  $D(p,\gamma)^3\text{He}$

Expect more changes next round concerning  $^7\text{Li}$

## Neutrinos in Cosmology

Lesgourges-Verde

Some new updated analyses on limits  $\Sigma m_\nu$

## Tests of Gravity

**Damour**

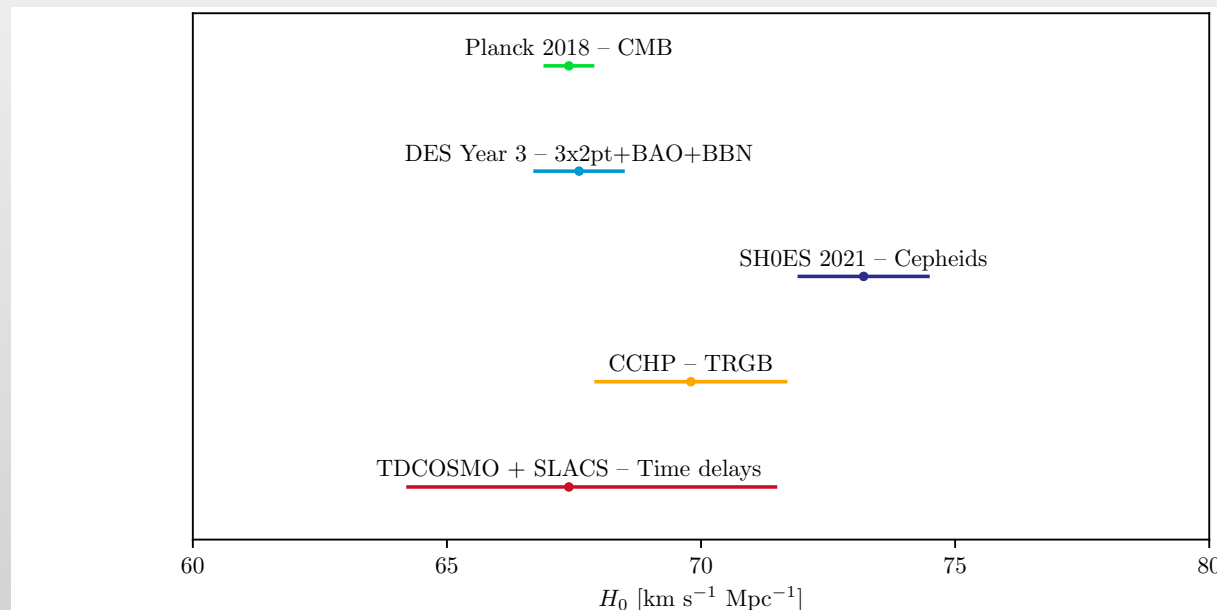
**2019 saw major expansion to included  
new results from LIGO/Virgo**

**2021 further expansion on gravitational waves**

## Cosmological Parameters

Lahav-Liddle

Updated on  $H_0$



New figure

Includes new data from DES

New data from Bicep2/Keck  $r < 0.036$  (down from 0.064)

## Dark Matter

**Baudis-Profumo**

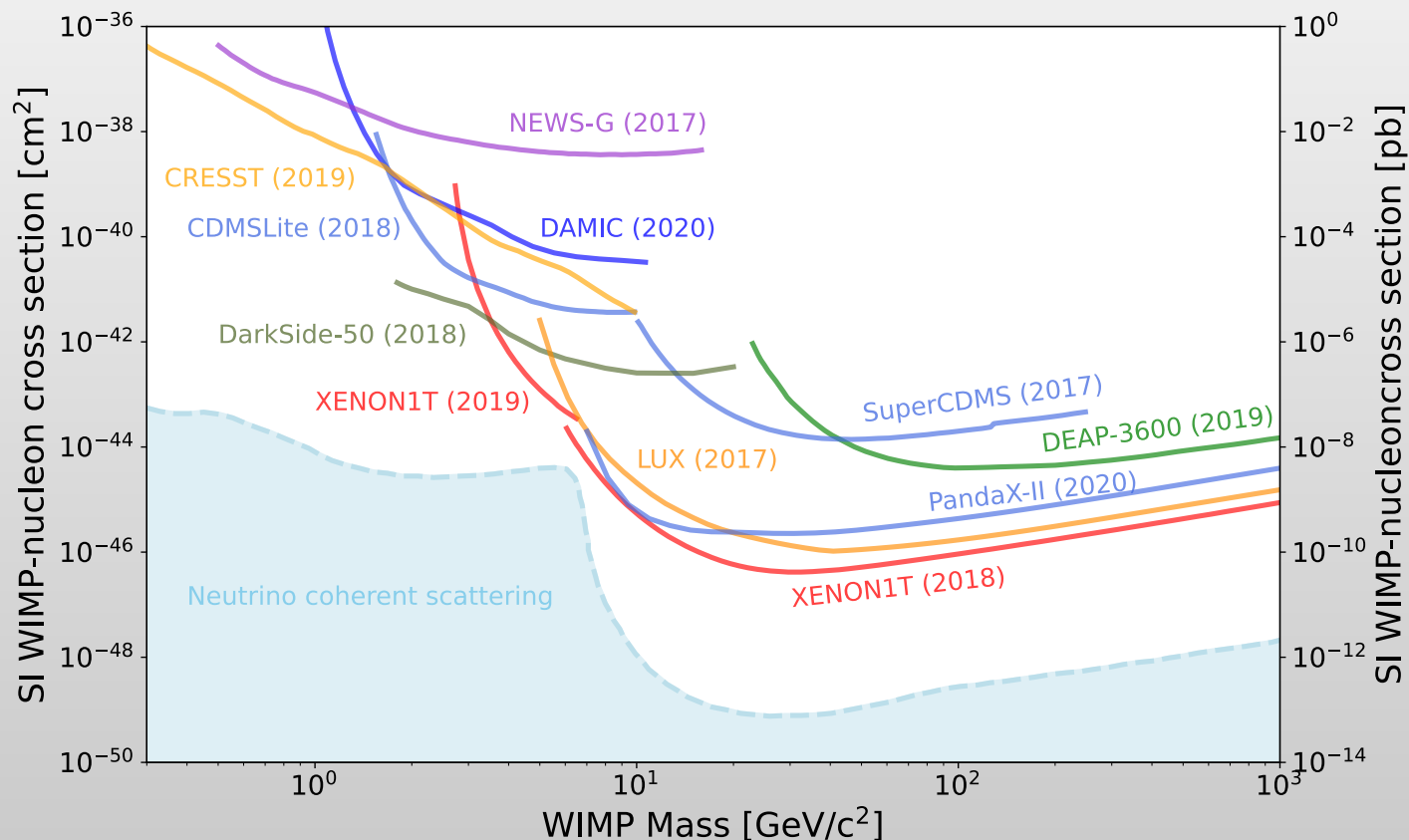
**Expanded discussion of Accelerator Searches**

**Updated results on Direct Detection (Table and Figure)  
current: includes PandaX-II**

**Next update should include recent LZ results.**

## Dark Matter

Baudis-Profumo



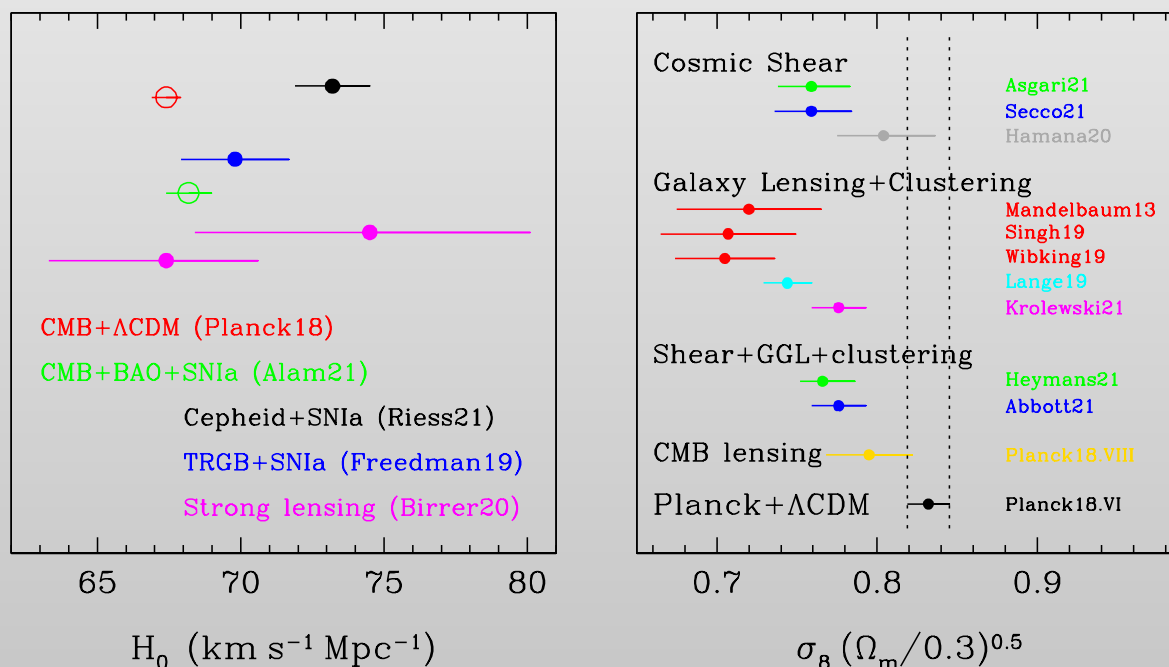


## Dark Energy

Weinberg-White

Updates from DES and eBOSS and other BAO measurements

Updated discussion on tensions in  $H_0$  (new figure)



K. Olive – November 3, 2022

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## No New Reviews or Author changes expected

**2013 New Dark Energy**

**2015 New Inflation**

**2017 New Neutrinos in Cosmology**

**2019 New DM/Tests of Gravity**

**2019 required many small changes required from Planck 2015 to Planck 2018.**

**2021 minor updates due to H0, DES, eBOSS, Bicep2/Keck,...**

**Major changes are not envisioned at this point.**