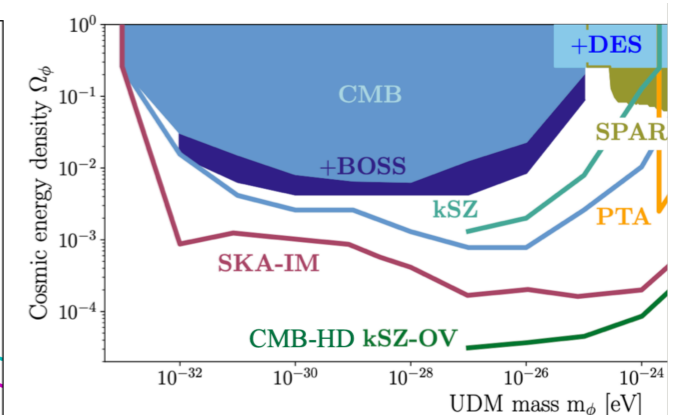
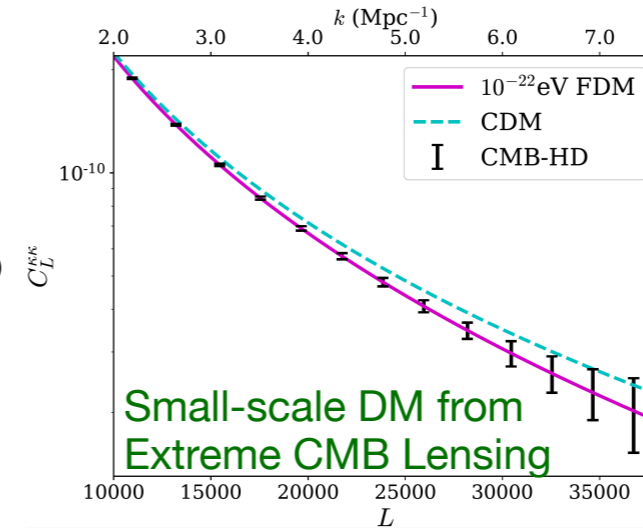


The Need for R&D Towards a Stage 5 CMB Facility

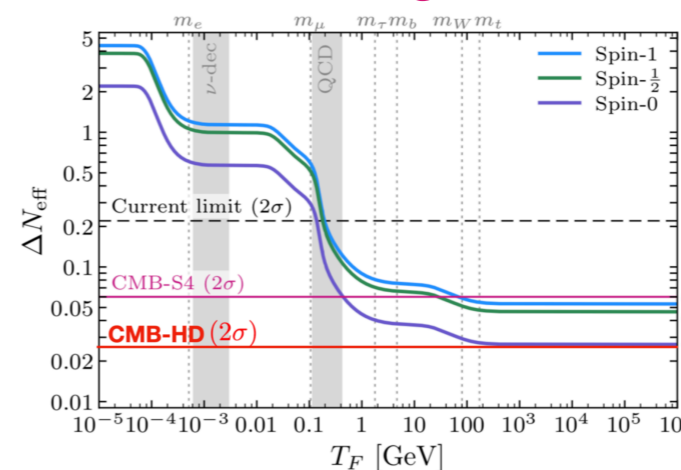
- CMB experiments have a strong track record of informing particle physics
- Simons Observatory and CMB-S4 are poised to extend progress
- A Stage 5 CMB facility, with 6x higher resolution and 3x lower noise than CMB-S4 can cross several critical thresholds (see figures)
- Snowmass Cosmic Frontier Report said:
 - “Support R&D and pathfinder studies for a next-generation CMB experiment (at the Stage V or VI level)”
 - “Support R&D and small projects to develop technologies and methods that can enable future surveys (e.g. LIM and CMB-S5)”
- It is essential to support R&D this decade, on both the theory and instrumental fronts, to enable a future Stage 5 CMB facility and the wealth of discoveries it can provide

See Snowmass WP [arXiv:2203.05728](https://arxiv.org/abs/2203.05728)

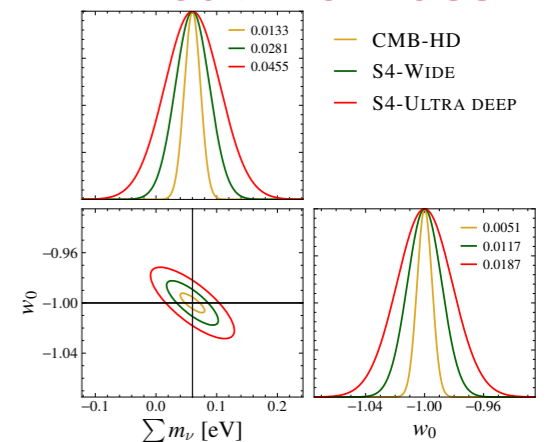
Discover Dark Matter Properties



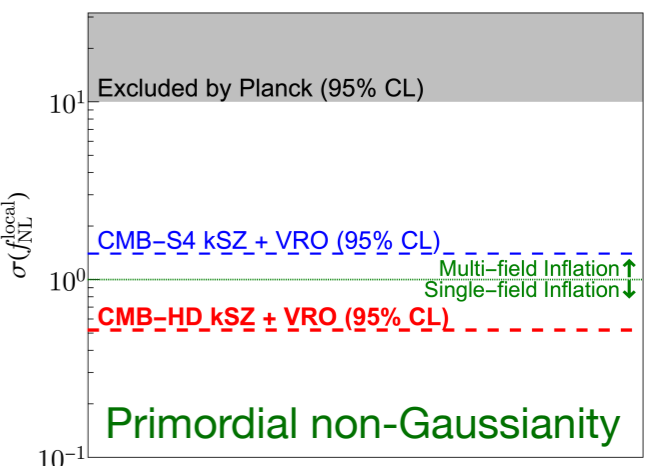
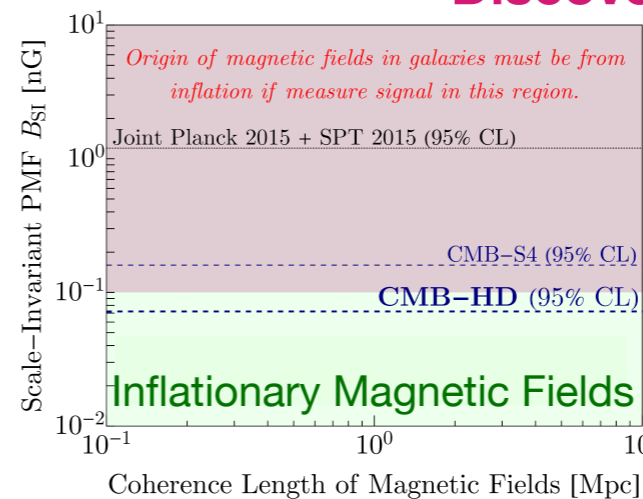
Discover Light Relics



Measure Dark Energy/ Neutrino Mass



Discover Inflation



+ **Gastrophysics, Transients, Planetary Studies...**