panel discussion

Late Universe ($z < 7$)

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Q1: Several independent probes prefer evolving DE:

DESI + CMB:	3.1σ
DESI + DESY5:	3.3σ
DESI + CMB + DESY5:	4.2σ
SN + CMB:	2.2σ
BAO (DES) + SN + CMB:	3.2σ

What would convince you that DE is truly evolving?

More in general: what do we mean by resolving a tension (any tension)?

Is enlarging the theoretical space to the extent that the tension phrased in it lowers to 2-3 sigma a bona fide solution, or is it missing the point?

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Q2: GW150914 was detected in the very first days of LIGO O1.

GW170817 was detected a few days after Virgo joined the LIGO's.

Assuming luck will continue to be on our side, what is your dream-GW signal to be detected immediately after ET/LISA ara switched on?

Q3a: The role of data analysis/data cleaning in modern cosmology is more important than in the past.

Is this trend going to be even more accentuated in the future? Is this a good thing?

Which role will AI/machine learning play? Do we teach enough about this matter in undergrad/phd courses?

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Q3b: How to go beyond power spectrum statistics? n-point statistics, marked statistics, field level?

Q4: What's the main driver of modified gravity research?

Is it to provide a 'parametric' testing framework for GR, to provide a dynamical explanation of dark energy, of dark matter, or what?

Put otherwise: what sets quantitative precision goals/drivers in this game?

For meaningful conclusions, do we need to push cosmo tests to 1%, 0.1%... precision, or what else?

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Q5: Where do you think the first confirmed break of LCDM will come from?

More specifically, if you had to choose only one, would you think that

- it's more important toextend the z-range of the universe we probe to the current precision and k-range, or do you think
- it's the precision and extension of k-range that will show the first credible signs of breaking it?

Q6: Current and upcoming surveys probe larger volumes making non-linearities more relevant.

Is perturbation theory (EFTofLSS) sufficient?
Or do we need alternatives? (emulators, N-body simulations, ML)

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(Q7: What are the prospects to measure neutrino masses?)

(Q8: Is there any convincing reason (pheno or theoretical one) to link massive “SM neutrinos” to putative neutrino DM or cosmologically detectable sterile states (e.g. at eV)?)

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