yesterday on April 11, just one week after releasing our cosmological r
BAO from galaxies and quasars and the Lyman-alpha forest.

Yesterday's papers do not exhibit new results, but represent major ste
towards the cosmology results from the RSD (aka Full Shape) analysis
release soon. They fall into the two categories:

- DESI 2024 II: Sample definitions, characteristics, and two-point clu
statistics.
- DESI 2024 V: Analysis of the full-shape of two-point clustering sta
galaxies and quasars

DESI 2024 II: Sample definitions, character and two-point clustering statistics.

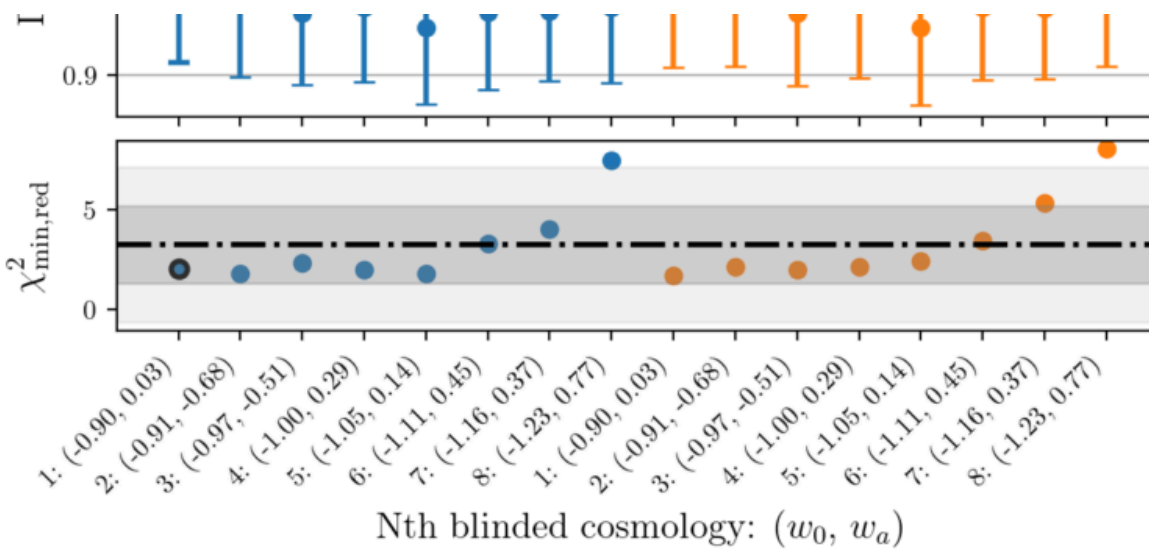
These papers describe the methods by which we ensure that all result
take into account systematic effects, including: incomplete galaxy sam
biases, and imaging systematics. For a general overview of how DESI s
targets, see this blog post, and for more information about survey val
this blog post.

Most papers attributed to this category are yet to come out. But one of them, the paper presenting the DESI Blinding strategy, was already released yesterday, given its synergy with the BAO papers released a week ago, and with the Full Shape

Summary:

Short: This paper introduces the blinding strategy ensuring a data ana confirmation bias, validating it using mock catalogs and blinded data.

Long: This paper introduces the galaxy and quasar BAO and RSD blinc where galaxy redshifts are displaced in two ways, such that overall the dark energy expansion history different than in the fiducial model wit cosmological constant and 2) a different growth of structure history c to a different law of gravity. Additionally, galaxy weights are applied tc effect of primordial non-Gaussianity. BAO fits and full-shape fits (Shap applied to one realization of Abacus mocks that was blinded accordin different varying dark energy and primordial non-Gaussianity scenari Additionally, the blinding scheme was applied to the blinded data and that “double-blinded” catalog using BAO fits.



This figure shows for one particular case the fitted isotropic and anisc dilation parameters scaled to the expectation obtained from 8 differe blindingalues of (w0, wa) and either positive (fnl=20) or negative (fnl=- non-Gaussianity. Deviations from 1 are observed only for very extrem blinding values.

DESI 2024 V: Analysis of the full-shape of t point clustering statistics from galaxies and quasars

This set of papers document various clustering statistics, modeling, and systematic analysis of DESI's Year one galaxy and quasar samples. While there is yet more to come out, yesterday's set of papers focus on the comparison between different

full-shape of 2-point clustering statistics:

1. Template fits: Here, templates of the two-point statistics at a fixe cosmology are used to extract physical information from the dat called 'compressed parameters' such as the isotropic and anisotr scales, the growth rate, and the scale-dependence, or shape. The rather new observable proposed in the 'ShapeFit' method, which the state-of-the-art method when it comes to template fits. Cosm parameters are obtained by fitting cosmological models to these parameters measured in each redshift bin. This is very similar to philosophy behind the BAO analysis, where the (compressed) BA parameters are measured first in each redshift bin and cosmolog parameters are obtained in a second step.
2. Full modeling fits: Here, the step of measuring compressed paran avoided. Instead, the 2-point statistics of all redshift bins are dire according to the cosmological model. This is similar to the philos the analysis of cosmic microwave background (CMB) or weak lens the 2-point statistics are also fitted directly, without an additional step in between.

Both these approaches have advantages and disadvantages. Template fits are designed to extract only the most robust information and allows for a modular interpretation. For example, they allow us to decouple the information on expansion history, growth history, and shape in an effective way. On the other hand, the extra compression step within the template fit method can erase some of the cosmological information within 2-point statistics. Direct fits allow us to

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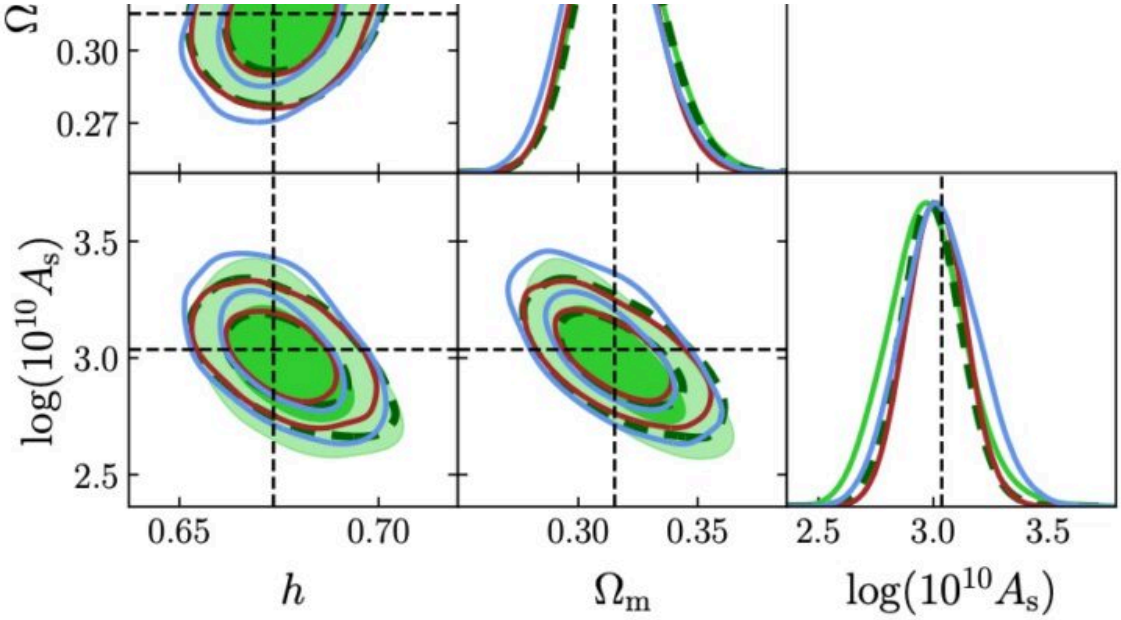
Corresponding Authors: Mark Maus, Yan Lai, Hernan E. Noriega and S Solano

arXiv: https://arxiv.org/abs/2404.07272

Summary:

Short: This paper models the redshift-space galaxy power spectrum ir linear regime with several different EFT models, compares the differer each other, and tests each using the AbacusSummit simulations.

Long: This paper demonstrates the level of consistency between the c effective field theory models used for fitting galaxy power spectra in r We show, by fitting to Abacus cubic mocks, that velocileptors (Lagrang Eulerian PT versions), PyBird, and FOLPSv give consistent constraints i ShapeFit parameters with differences in means of <0.1sigma. We also noiseless theoretical data vectors created by each model while varyin and show that for kmax=0.18 h/Mpc the systematic errors are far belc statistical errors for all parameters at precisions corresponding to 8 (Gpc/h)3 volumes.



An analysis of parameter compression and full-modeling techniq Velocileptors for DESI 2024 and beyond

Corresponding author: Mark Maus

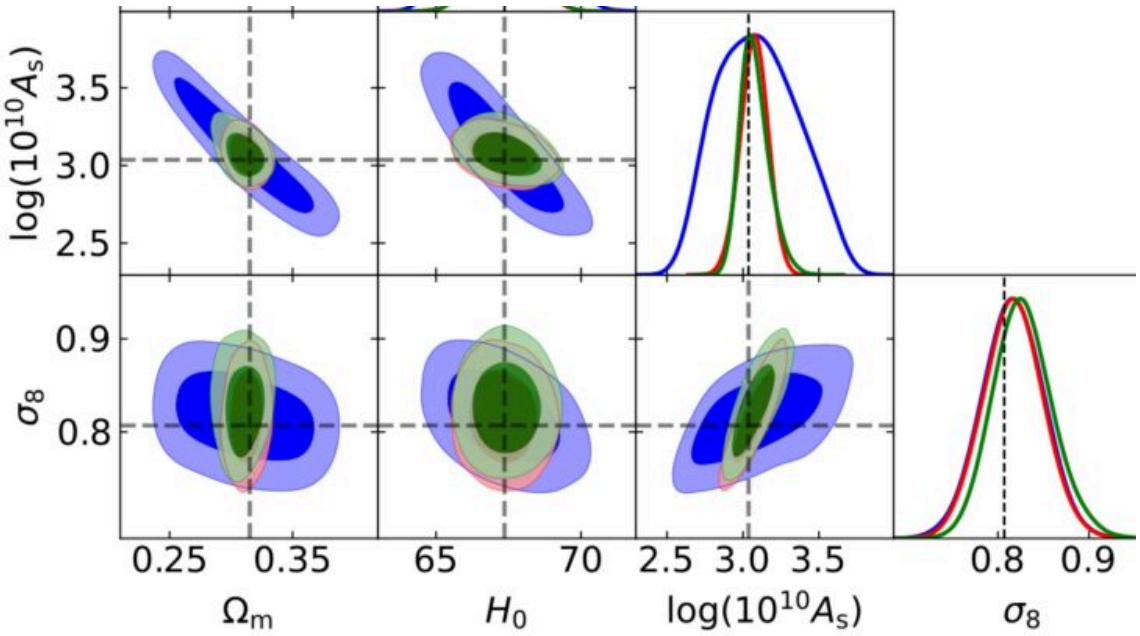
arXiv: https://arxiv.org/abs/2404.07312

Summary:

Short: This paper includes validation testing of various features of the analysis using the Velocileptors pipeline in combination with AbacusSummit mocks. Studies

of fitting settings with/without including BAO information in order to c
optimal fitting settings for velocileptors for DESI Y1 analyses and beyo

We demonstrate constraints on the LRG mock data for the three mod
methods in the right panel of Fig. 3, also shown here:



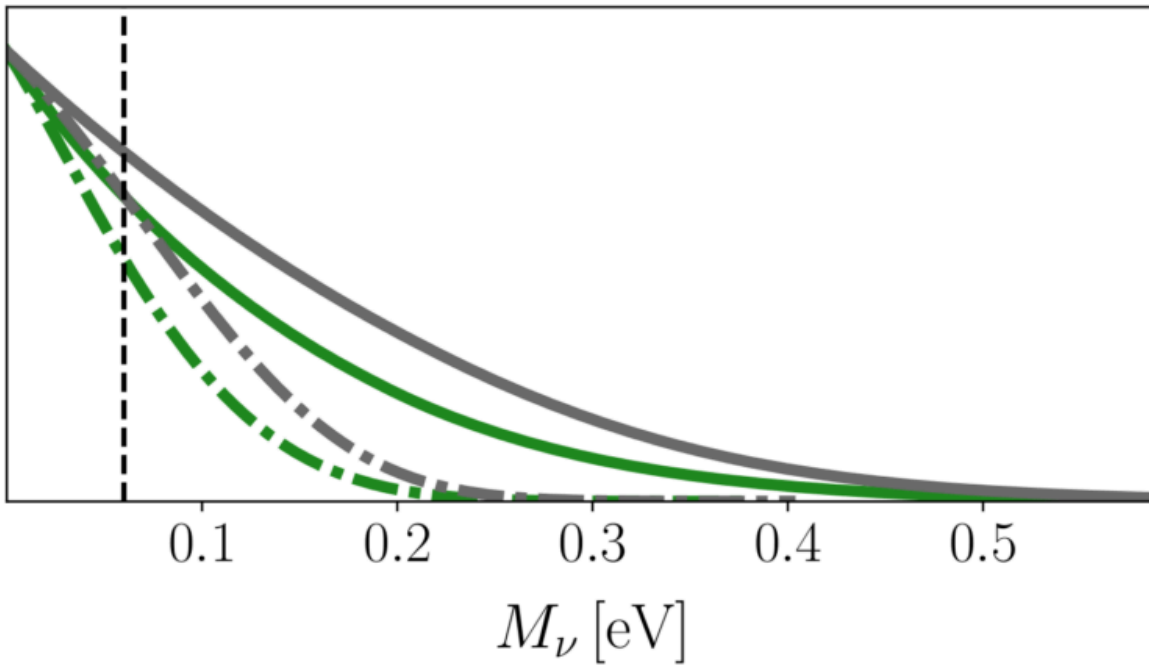
Comparing Compressed and Full-modeling Analyses with FOLPS: I for DESI 2024 and beyond

Corresponding author: Hernan E. Noriega

arXiv: https://arxiv.org/abs/2404.07269

Summary:

Short: This paper explores potential sources of systematic error in the full-shape analysis and compression techniques, using the AbacusSummit mocks.



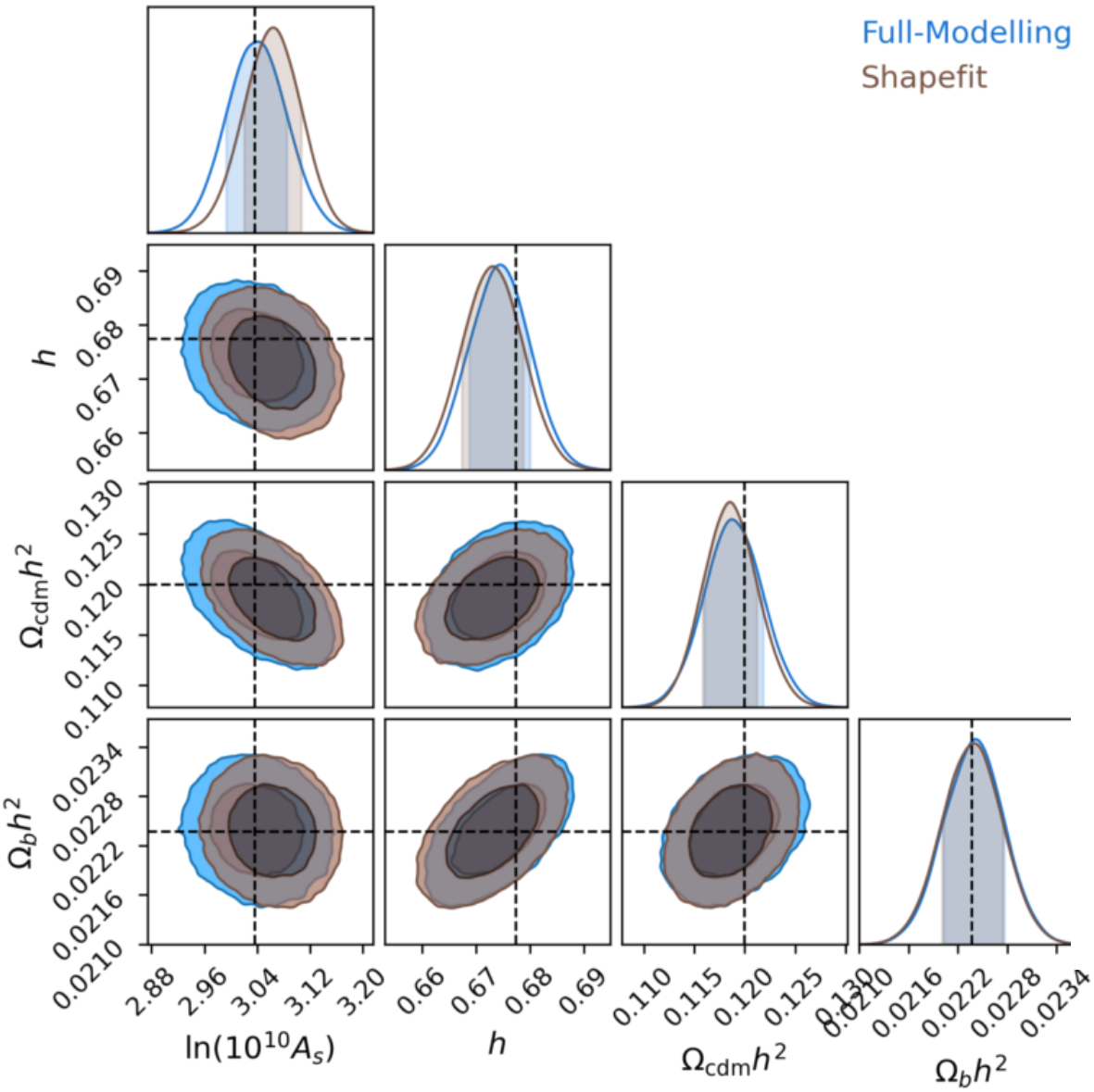
A comparison between Shapefit compression and Full-Modelling PyBird for DESI 2024 and beyond

Corresponding author: Yan Lai

arXiv: https://arxiv.org/abs/2404.07283

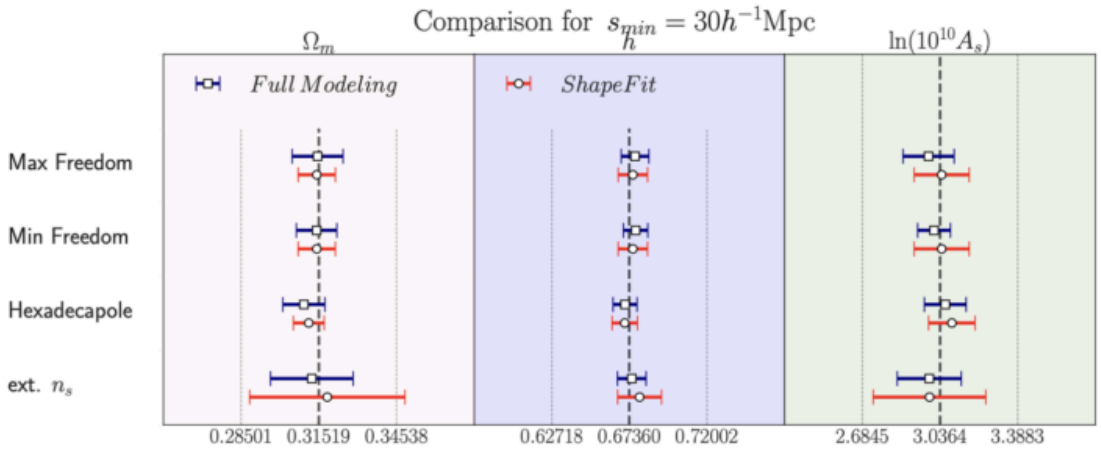
Summary:

Short: This paper shows that the Shapefit compression matches cosmological constraints using traditional full-shape analysis for ΛCDM, wCDM, and oCDM



Full Modeling and Parameter Compression Methods in configuration space for DESI 2024 and beyond

investigate the performance of both direct fits (Full-Modeling) and the
compression approaches (ShapeFit and Standard) with CLPT-EFT. Our
recovers unbiased cosmological parameter values for a 1-year DESI vo
also present the comparisons of the configuration space version of di
models.



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DESI Joins in Hosting
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Sneaking around with

Lightning and a lunar
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