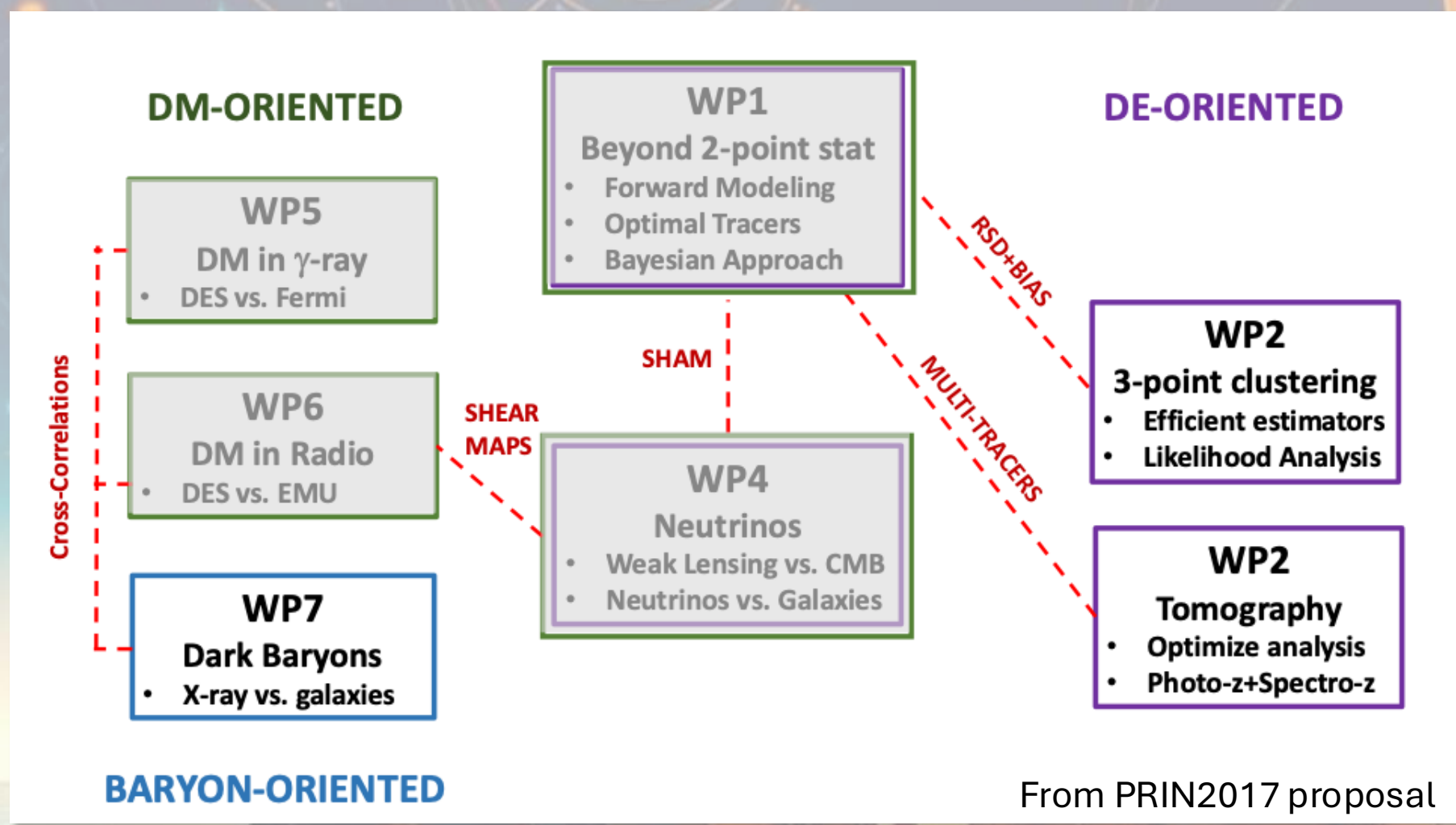


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Enzo Branchini

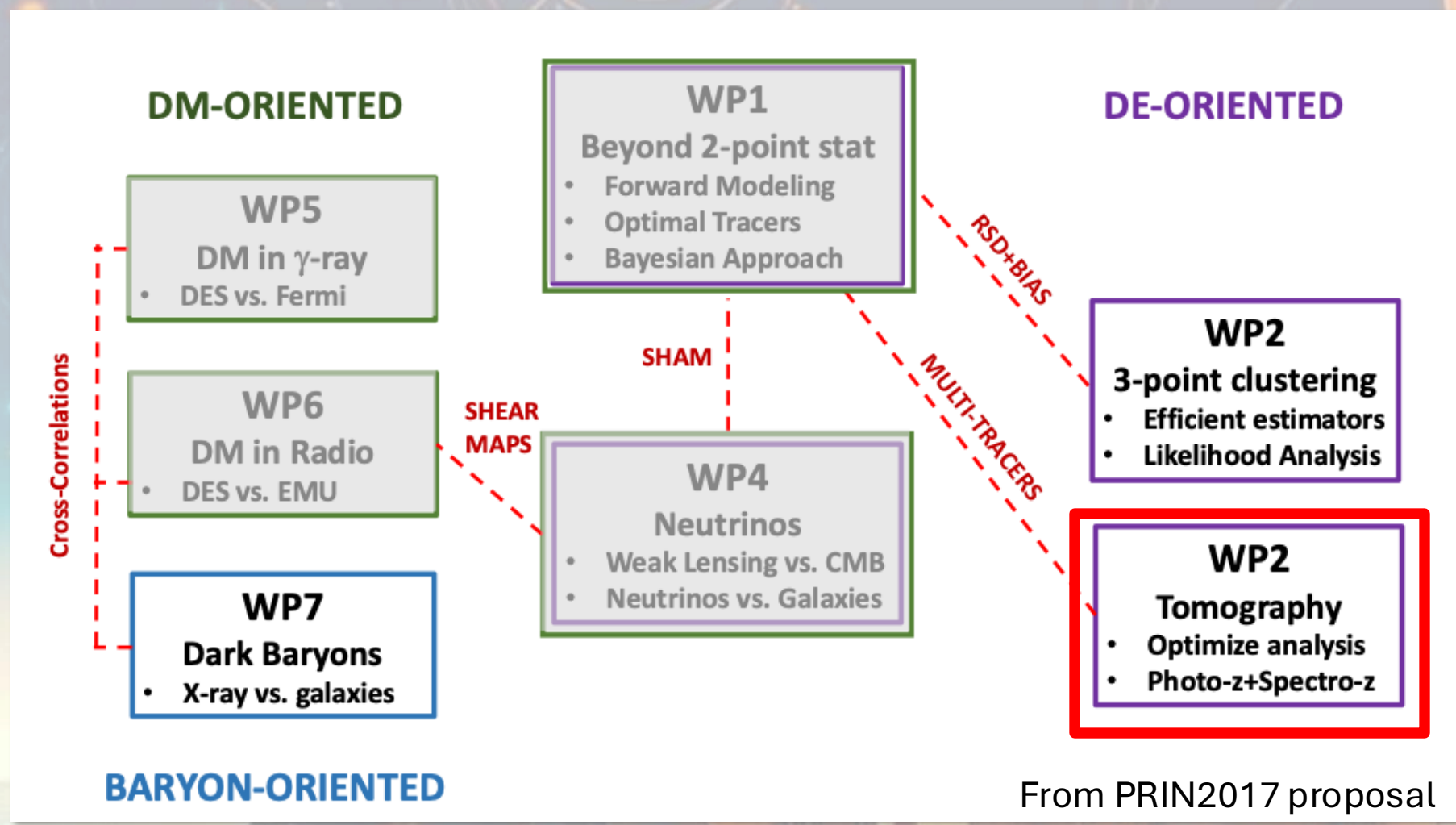
Sestri Levante
16-17 September 2024

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From PRIN2017 proposal

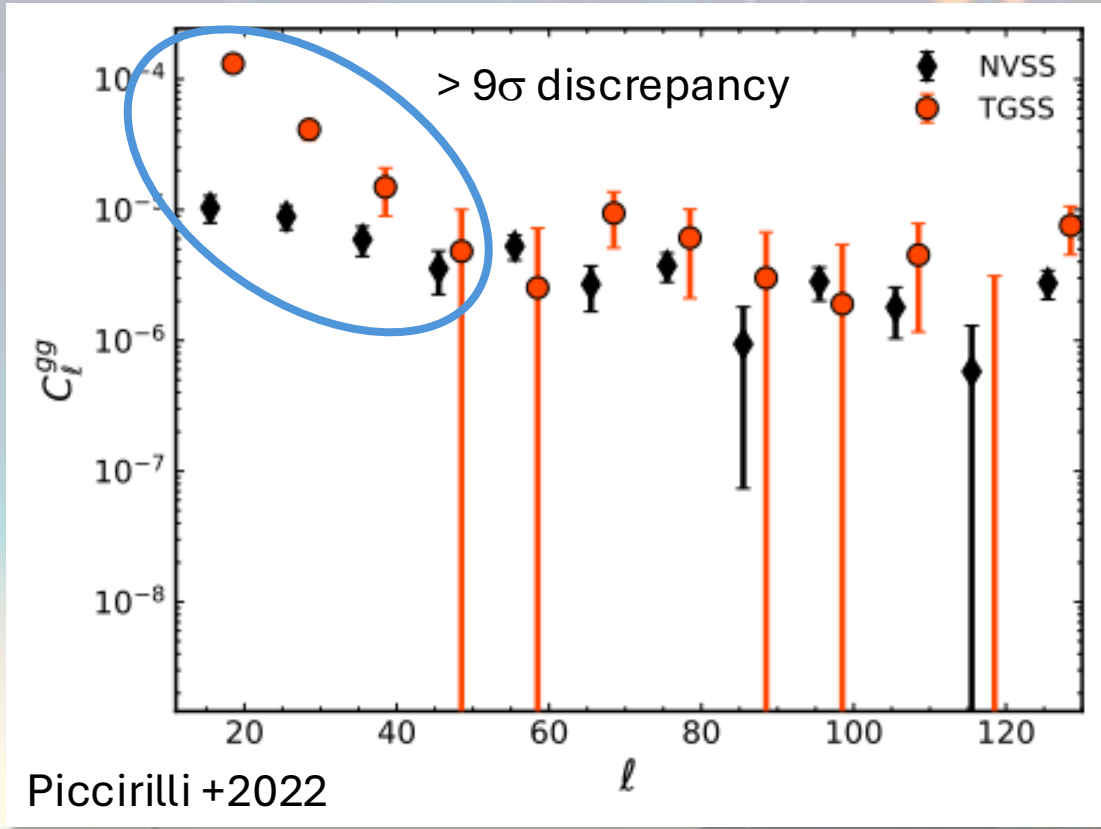
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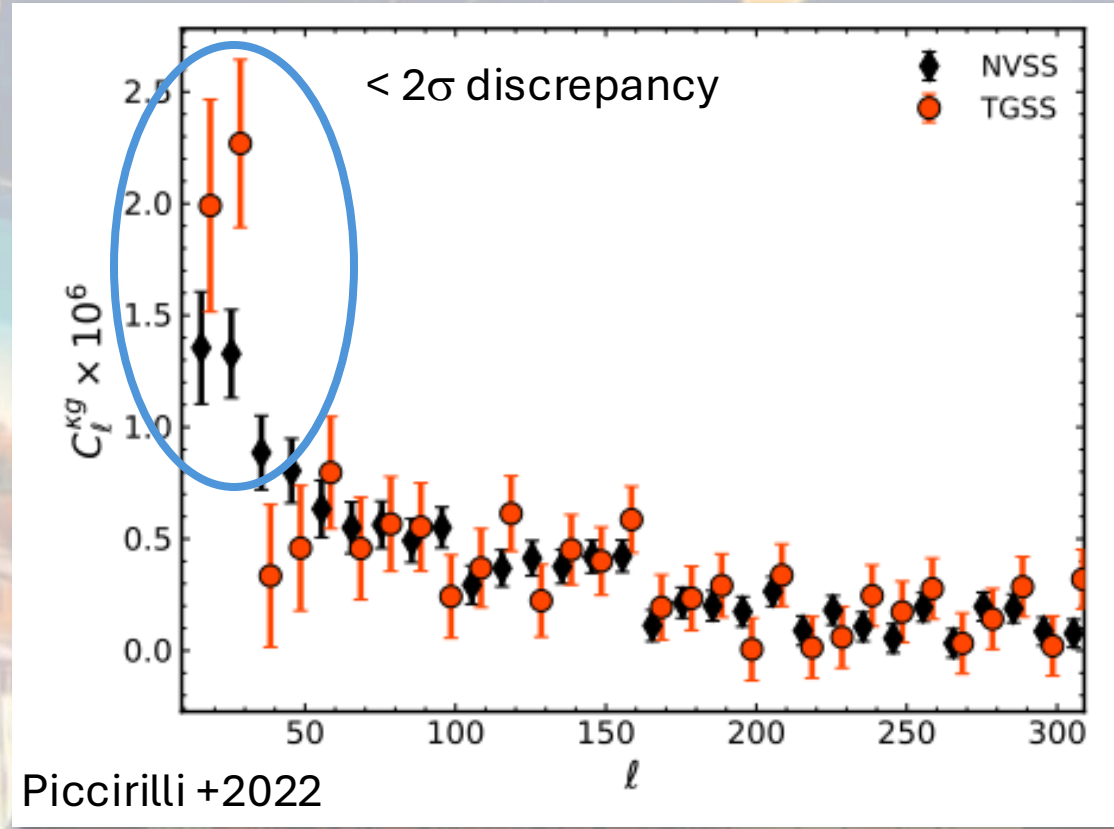
From PRIN2017 proposal



Auto-spectra



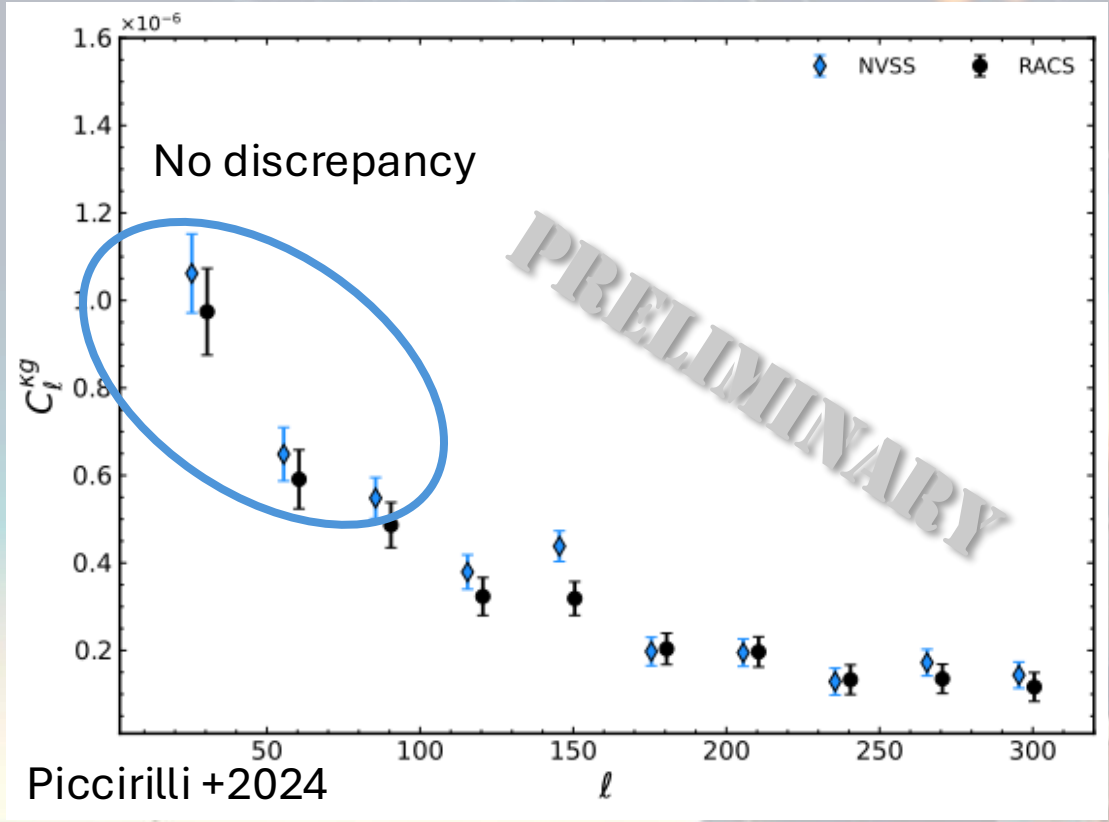
Cross-spectra



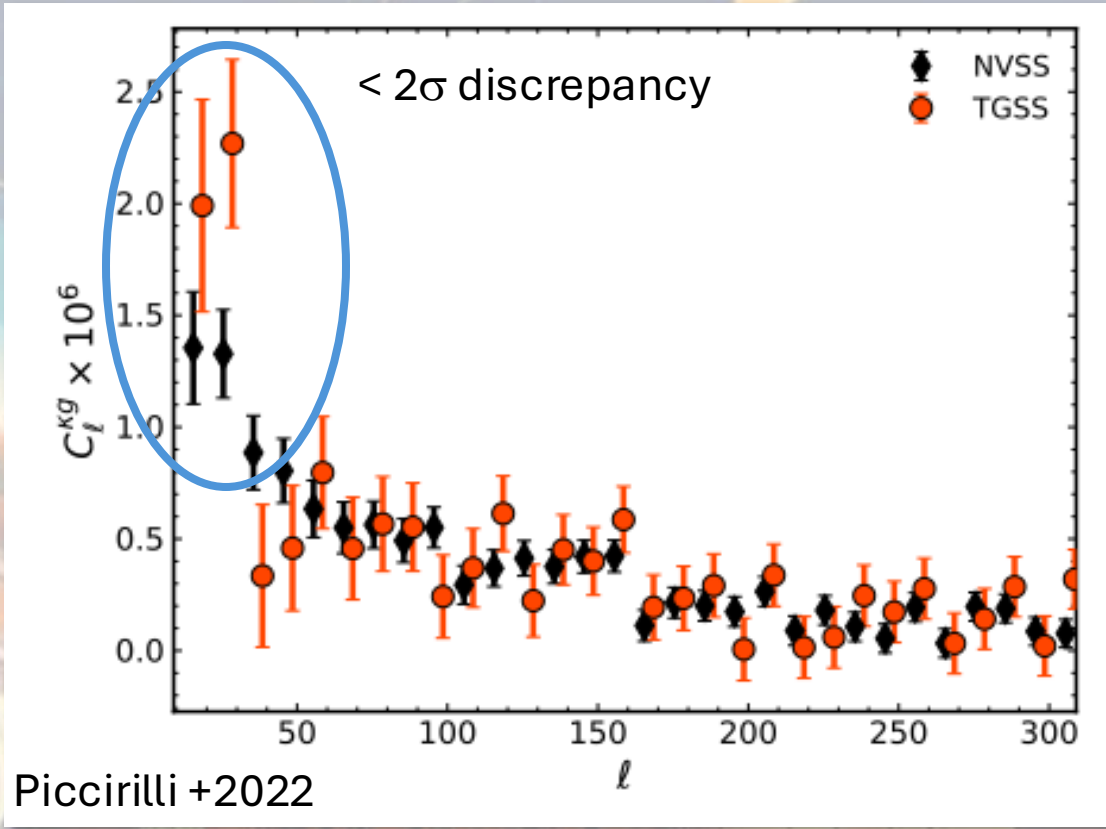
NVSS large scale power excess: genuine or spurious ?



Cross-spectra

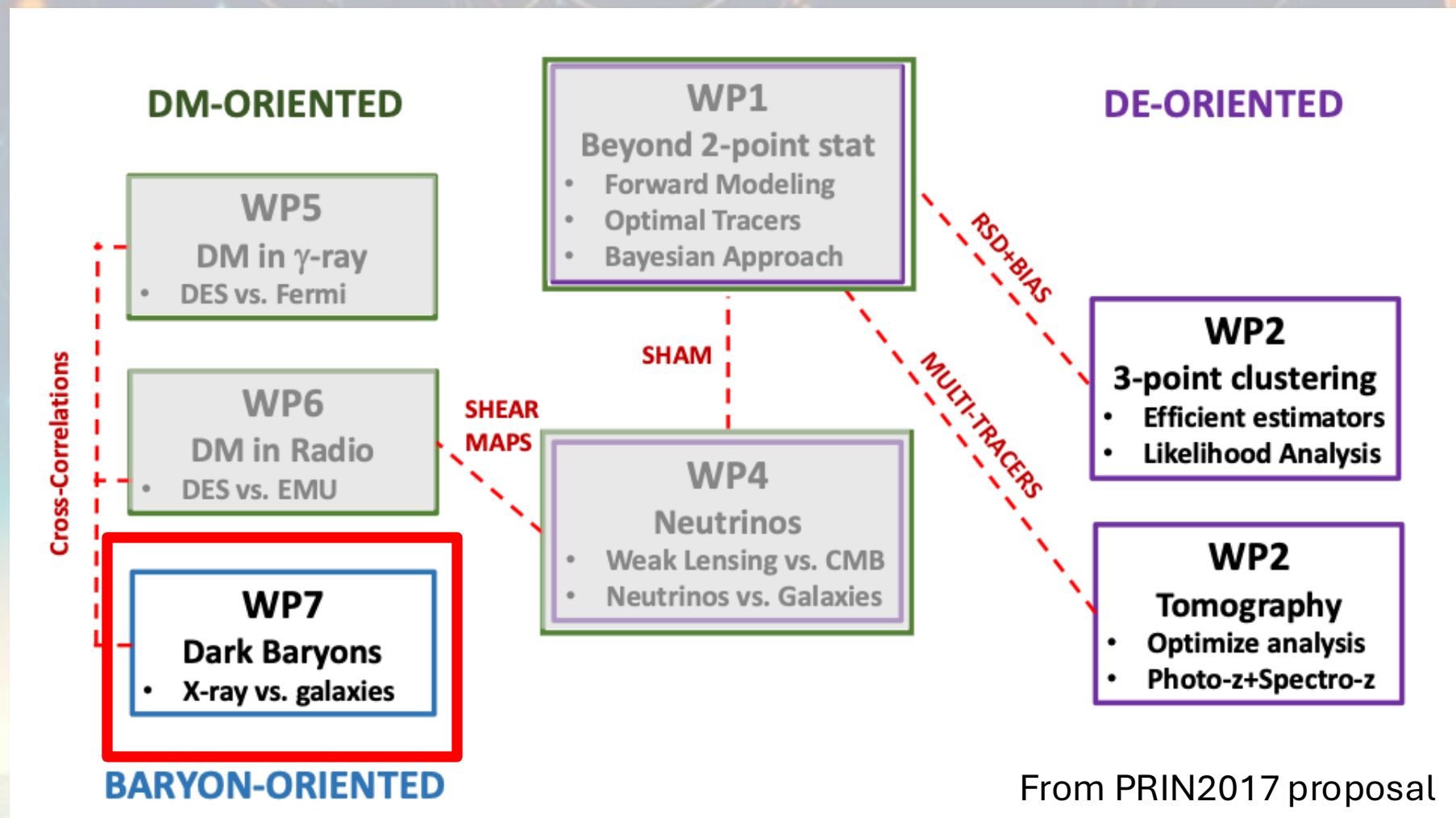


Cross-spectra



NVSS large scale power excess: genuine or spurious ?

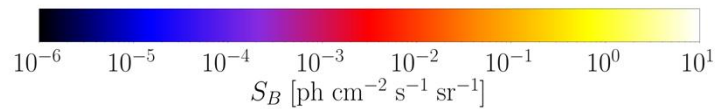
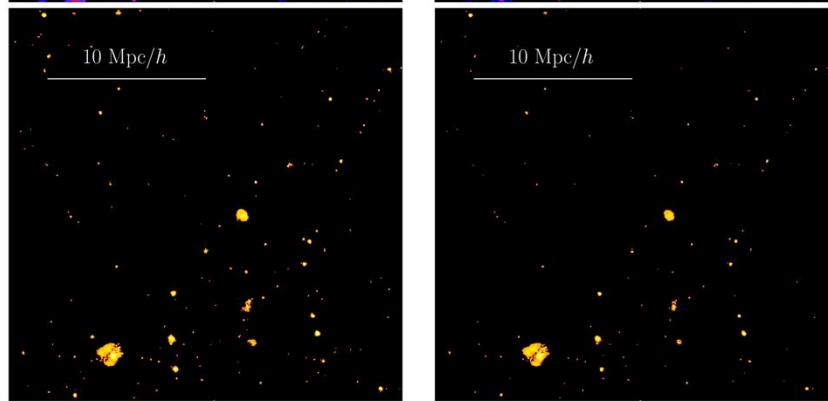
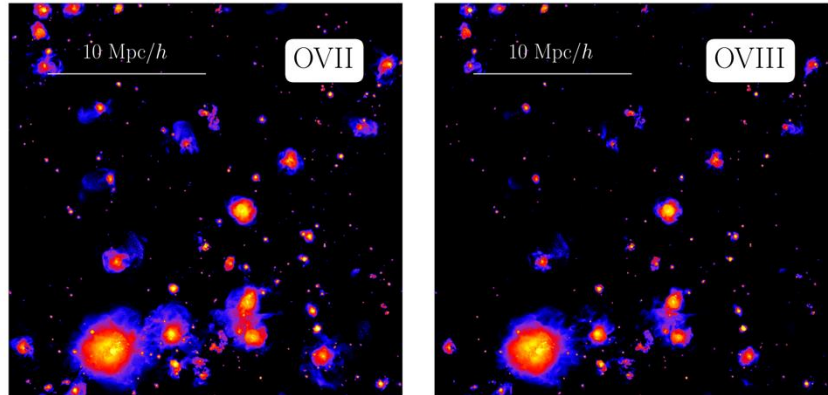
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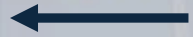
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$z = 0.27$ Parimbelli+2023



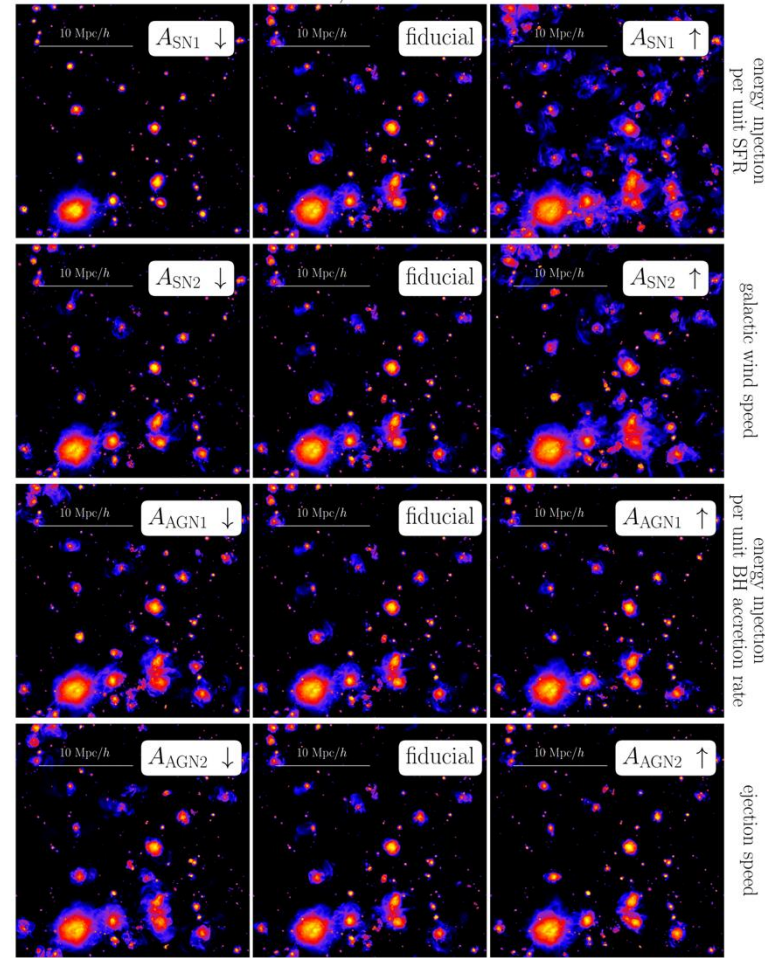
What we could observe



What we will observe

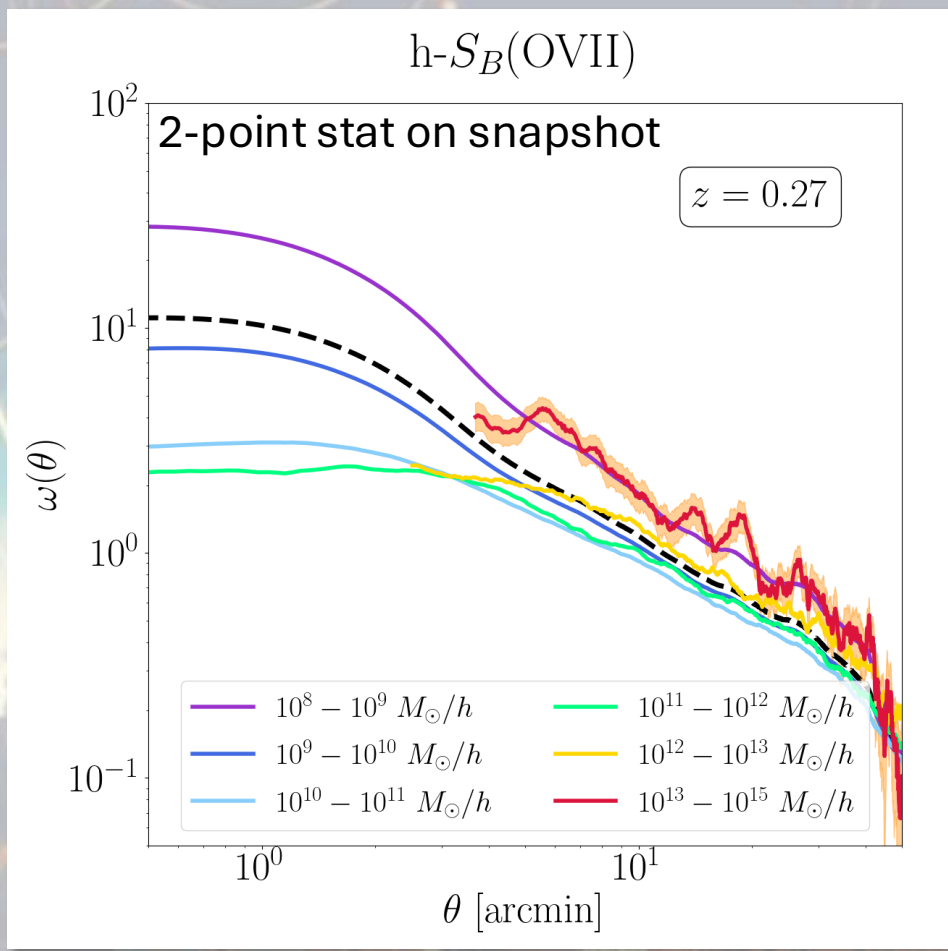
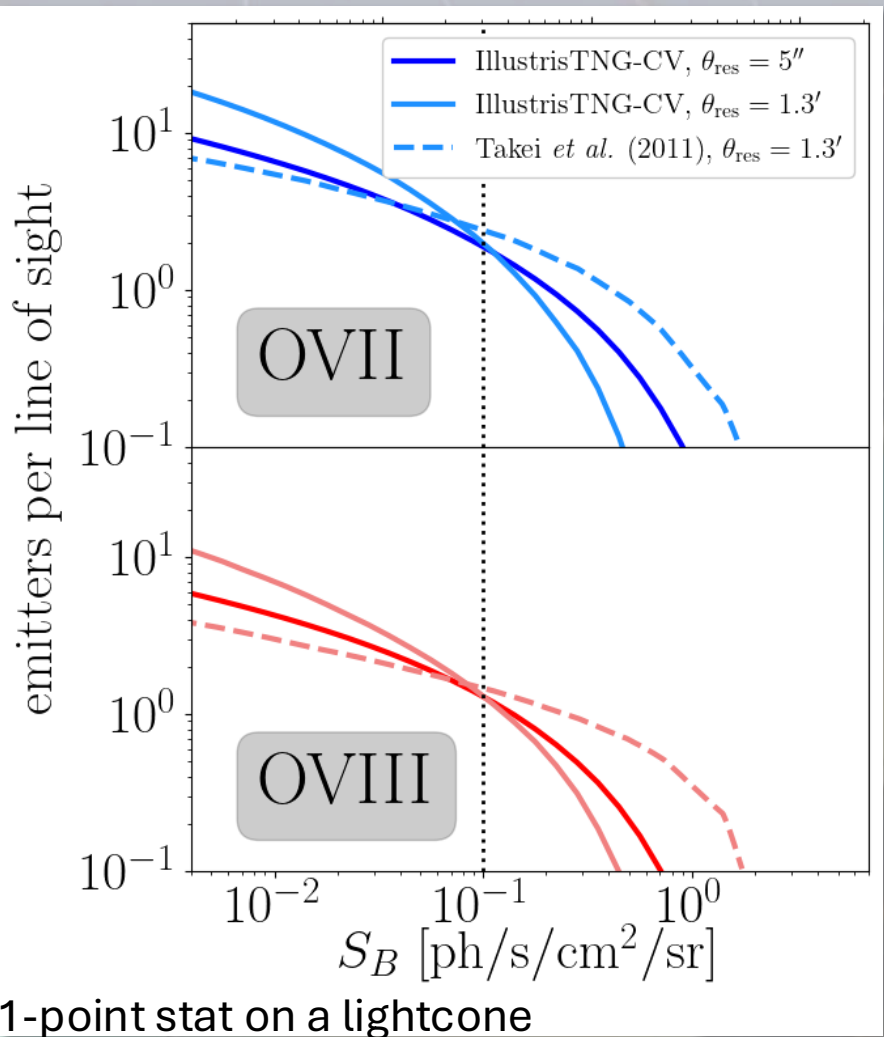


OVII, $z = 0.27$



The CAMELS suite of simulations allows one to assess the robustness to the choice of various cosmological and astrophysical model parameters

Will Athena satellite be able to investigate the WHIM in emission ?

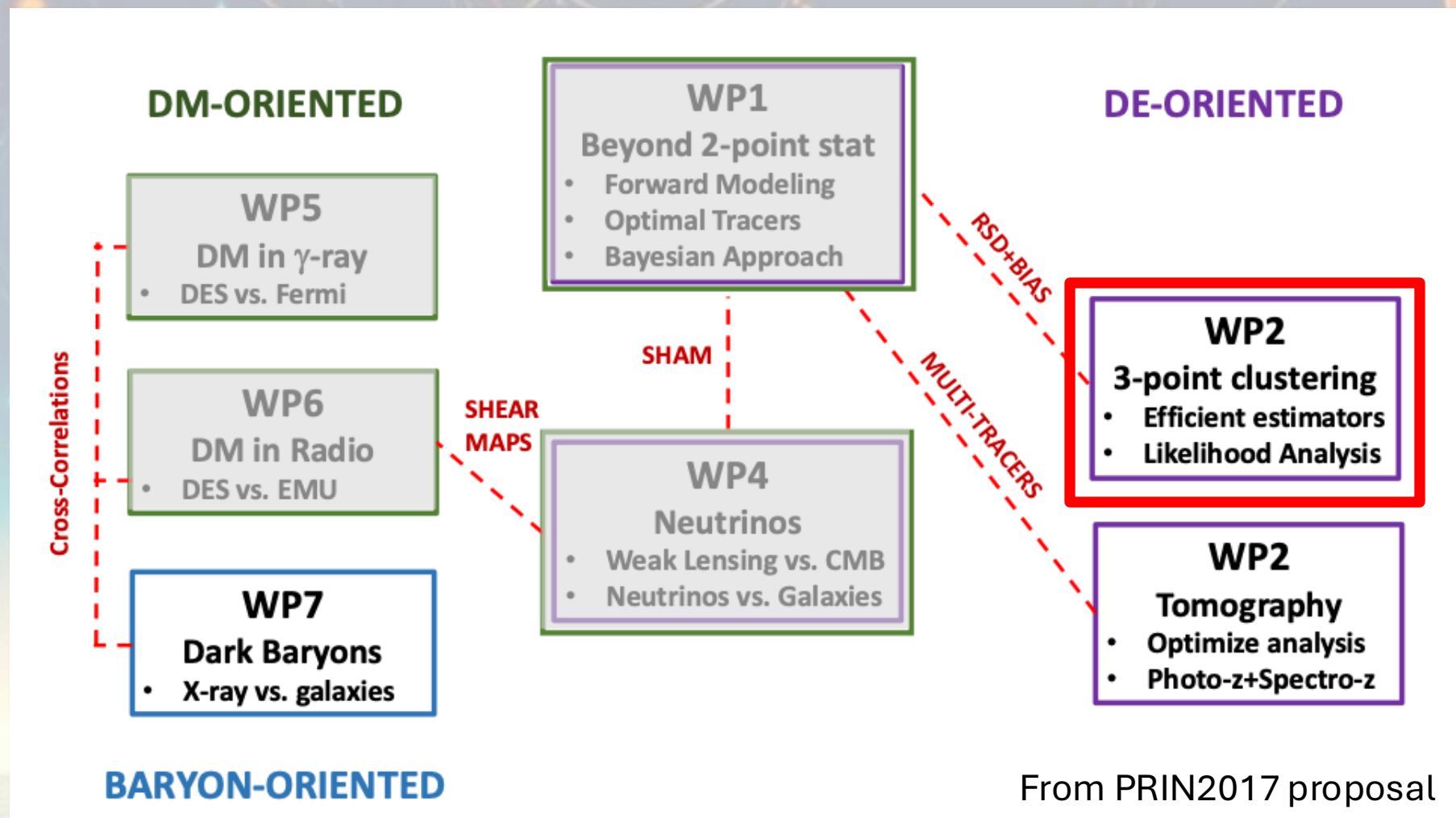


Next:

- More realistic forecast using all emission lines from emitters in a lightcones + foregrounds and AGNs.
- Going beyond 1- and 2-point statistics. ML-techniques to get the most out of the emission maps.

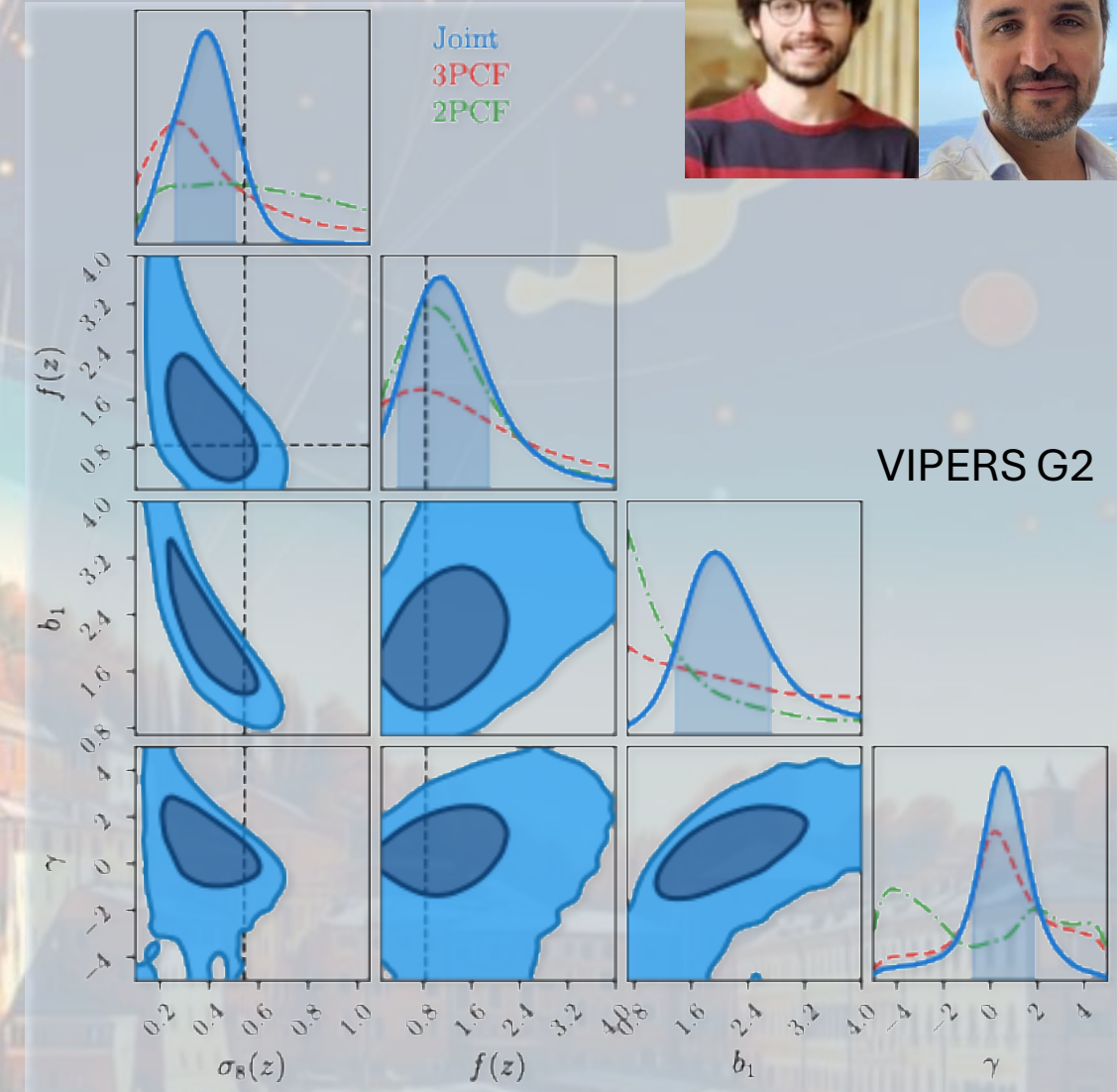
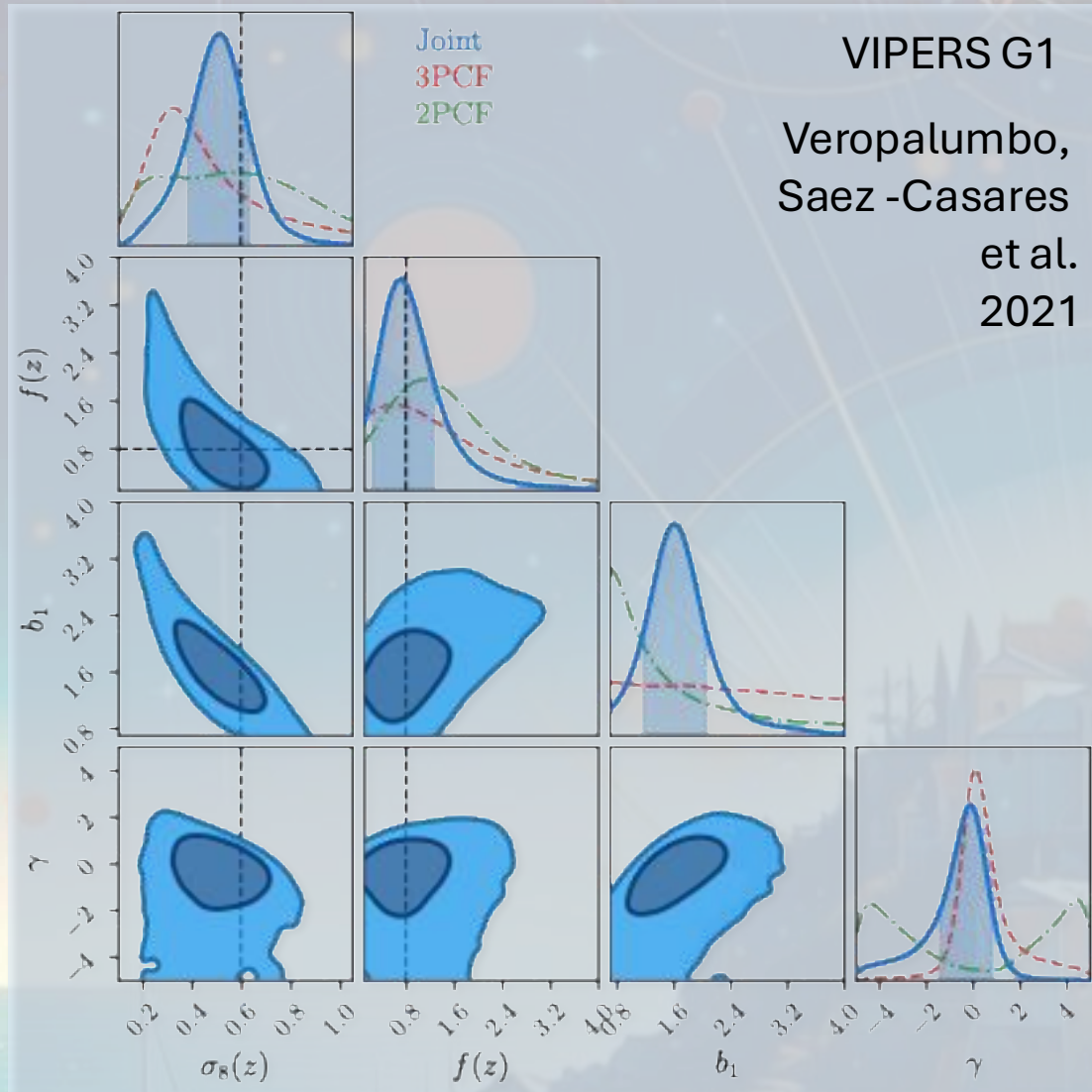
Will Athena satellite be able to investigate the WHIM in emission ?

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From PRIN2017 proposal

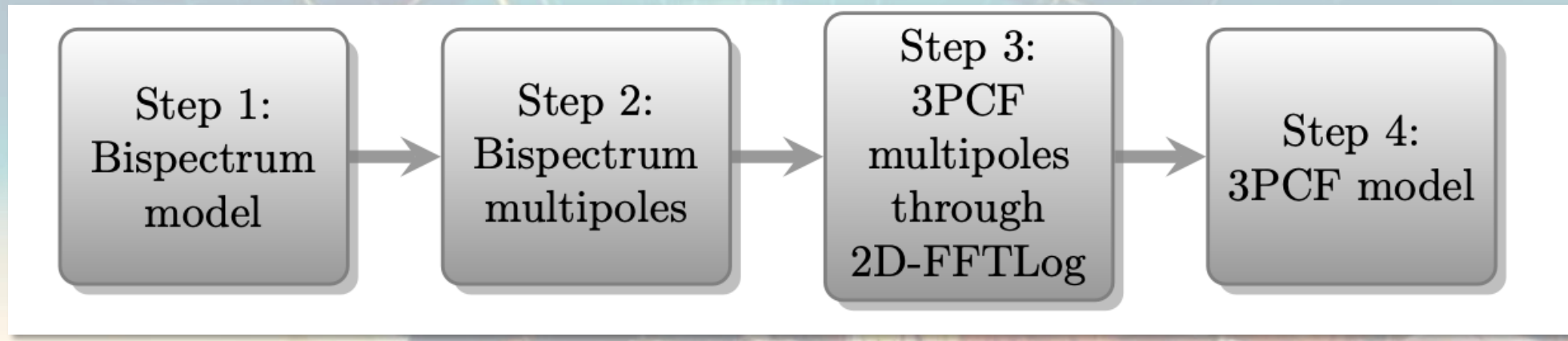
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Galaxy 3PCF as cosmological probe.



Going beyond linear theory (NLO-SPT): strategy.



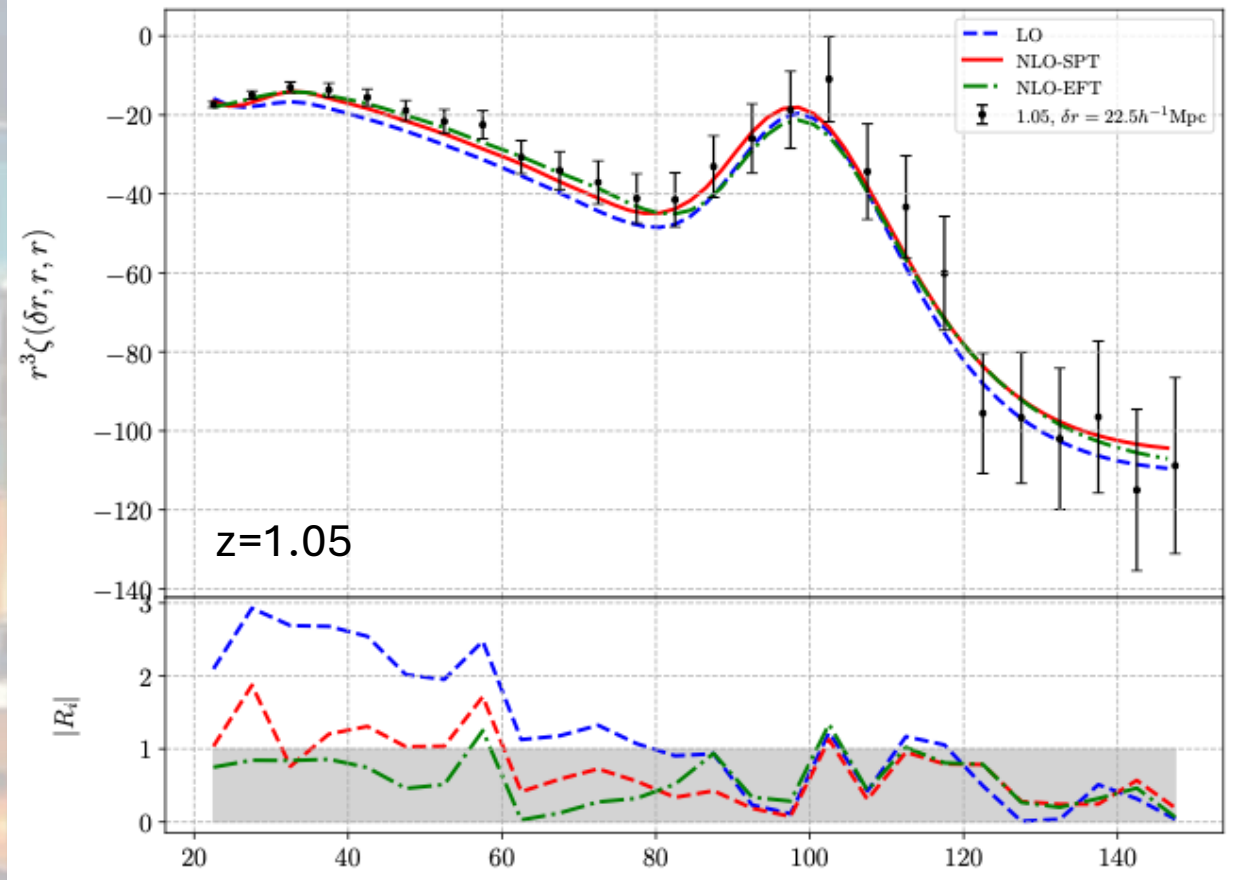
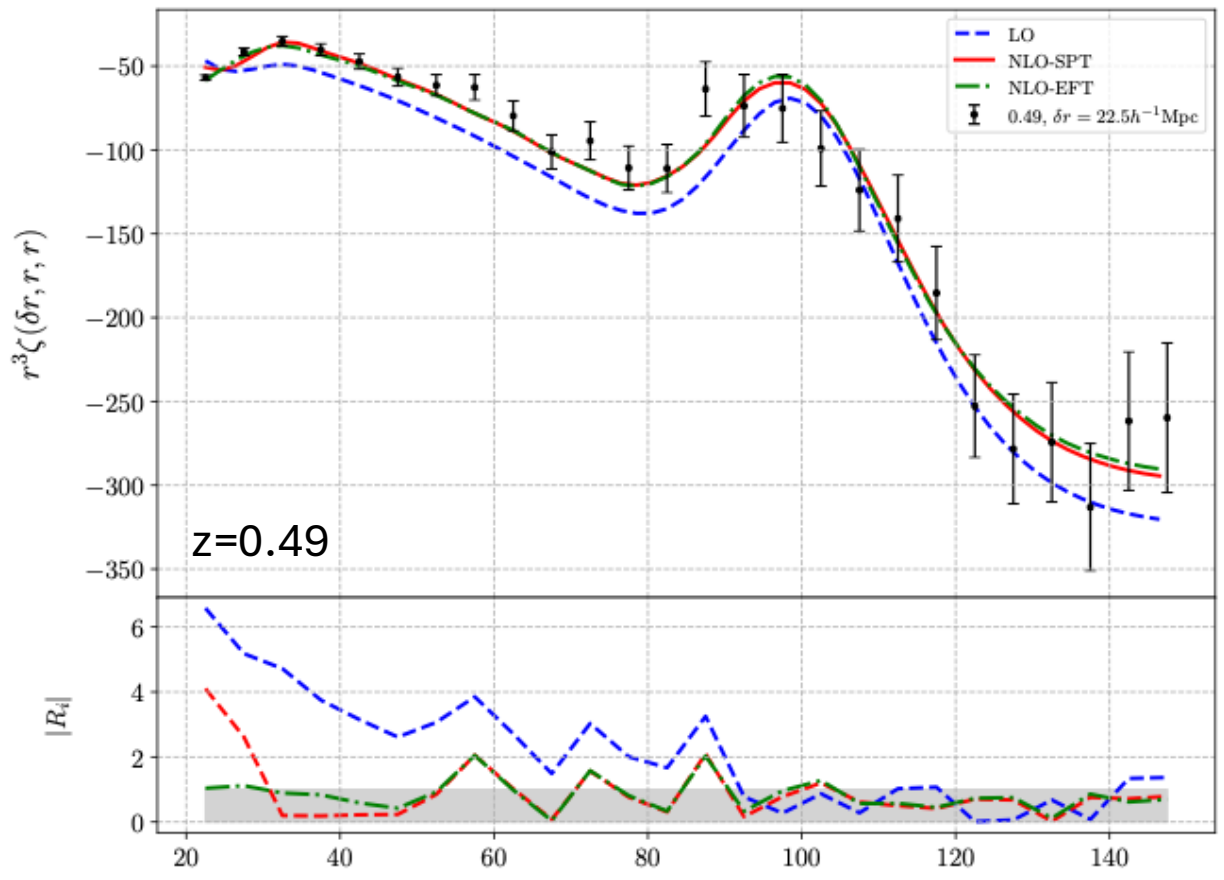
Galaxy 3PCF as cosmological probe.

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Guidi, Veropalumbo et al. 2023

Isosceles triangles ($\delta r = 22.5 h^{-1} \text{ Mpc}$)
DEMNUi simulations



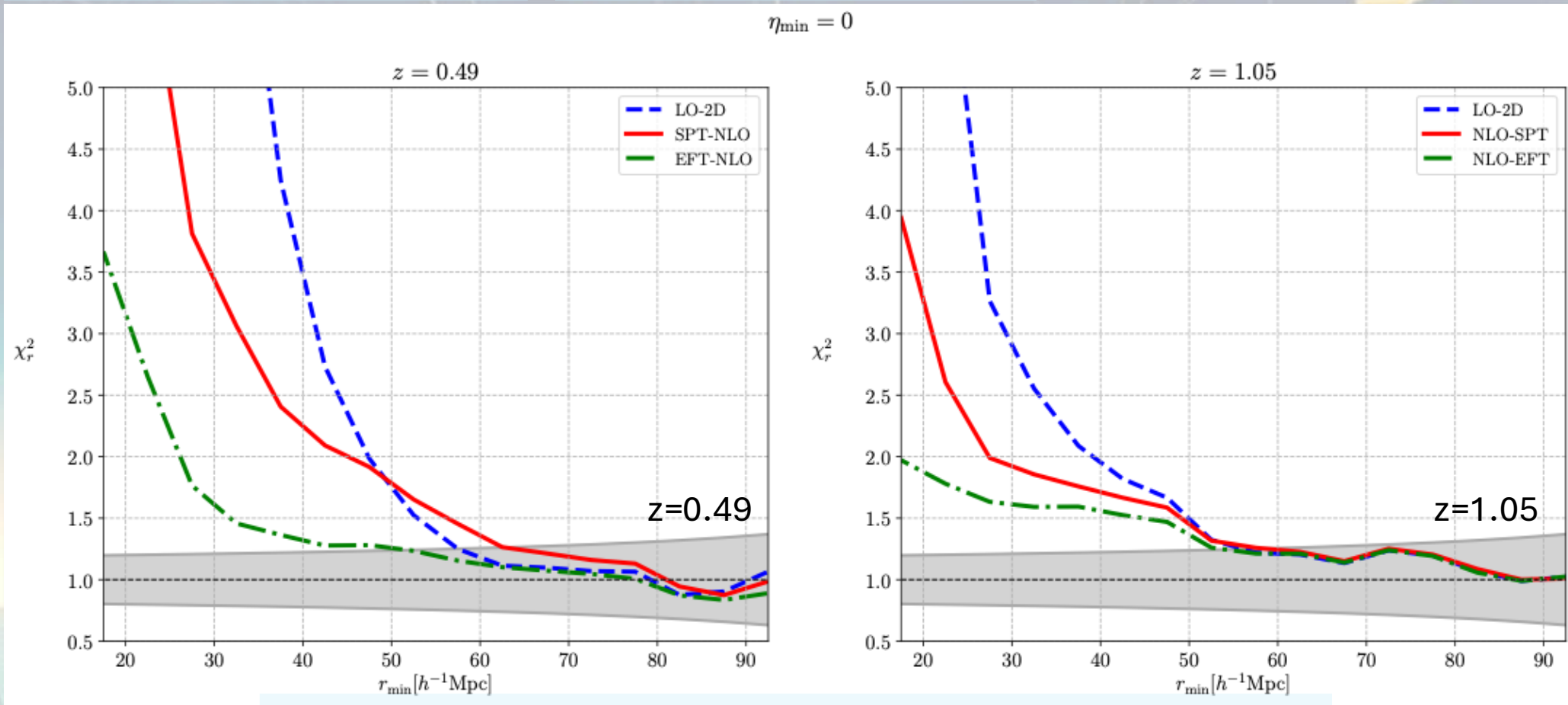
Galaxy 3PCF as cosmological probe.

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Guidi, Veropalumbo et al. 2023

ALL triangles
DEMNUi simulations

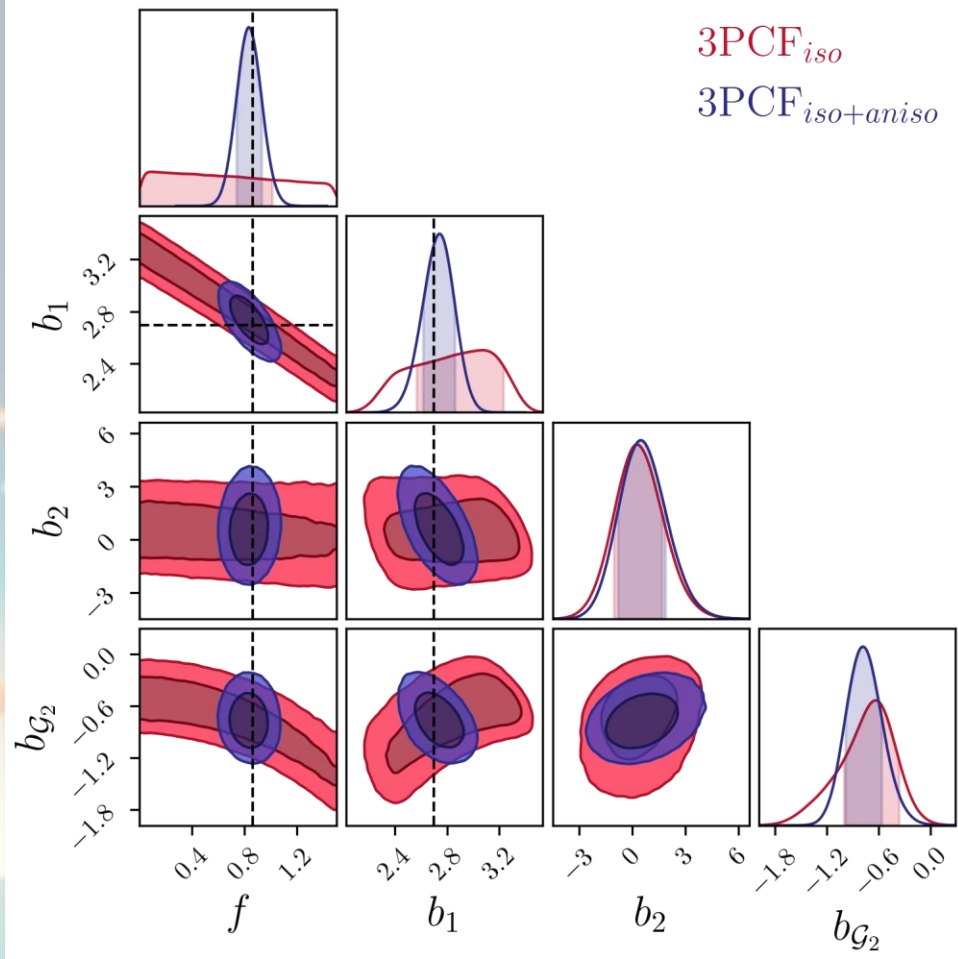


Galaxy 3PCF as cosmological probe.

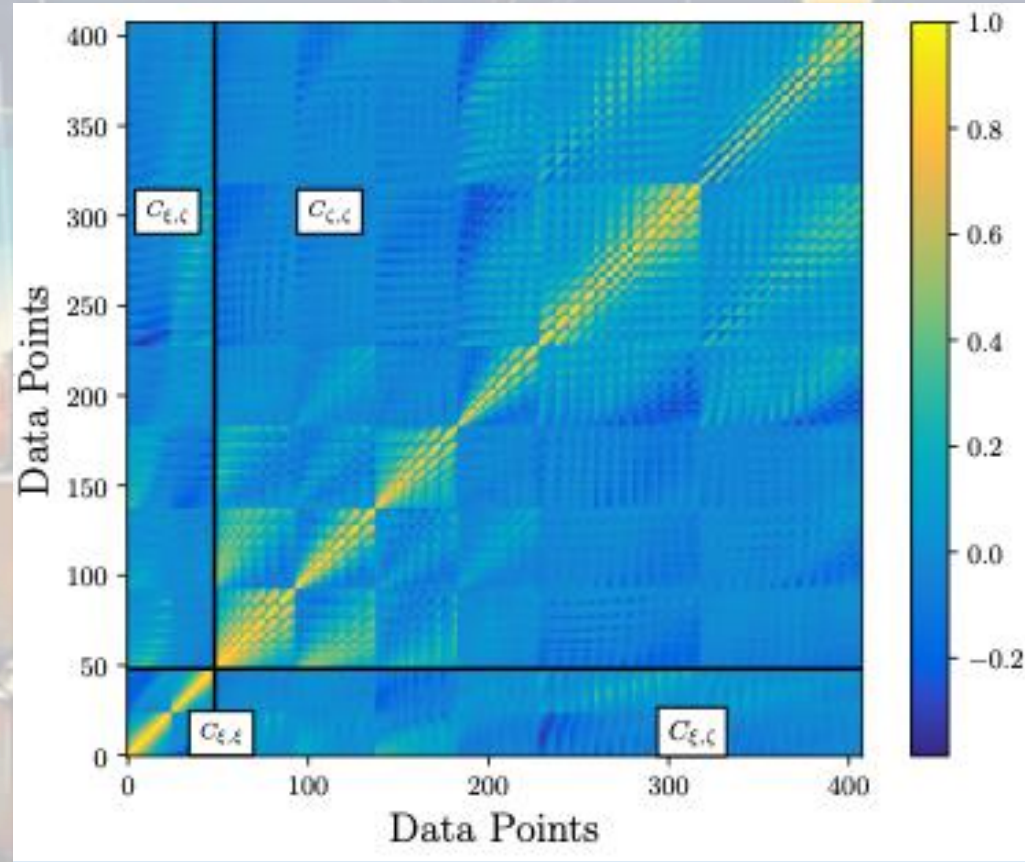
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“Data” from 298 Minerva



Covariance from 3000 Pinocchio

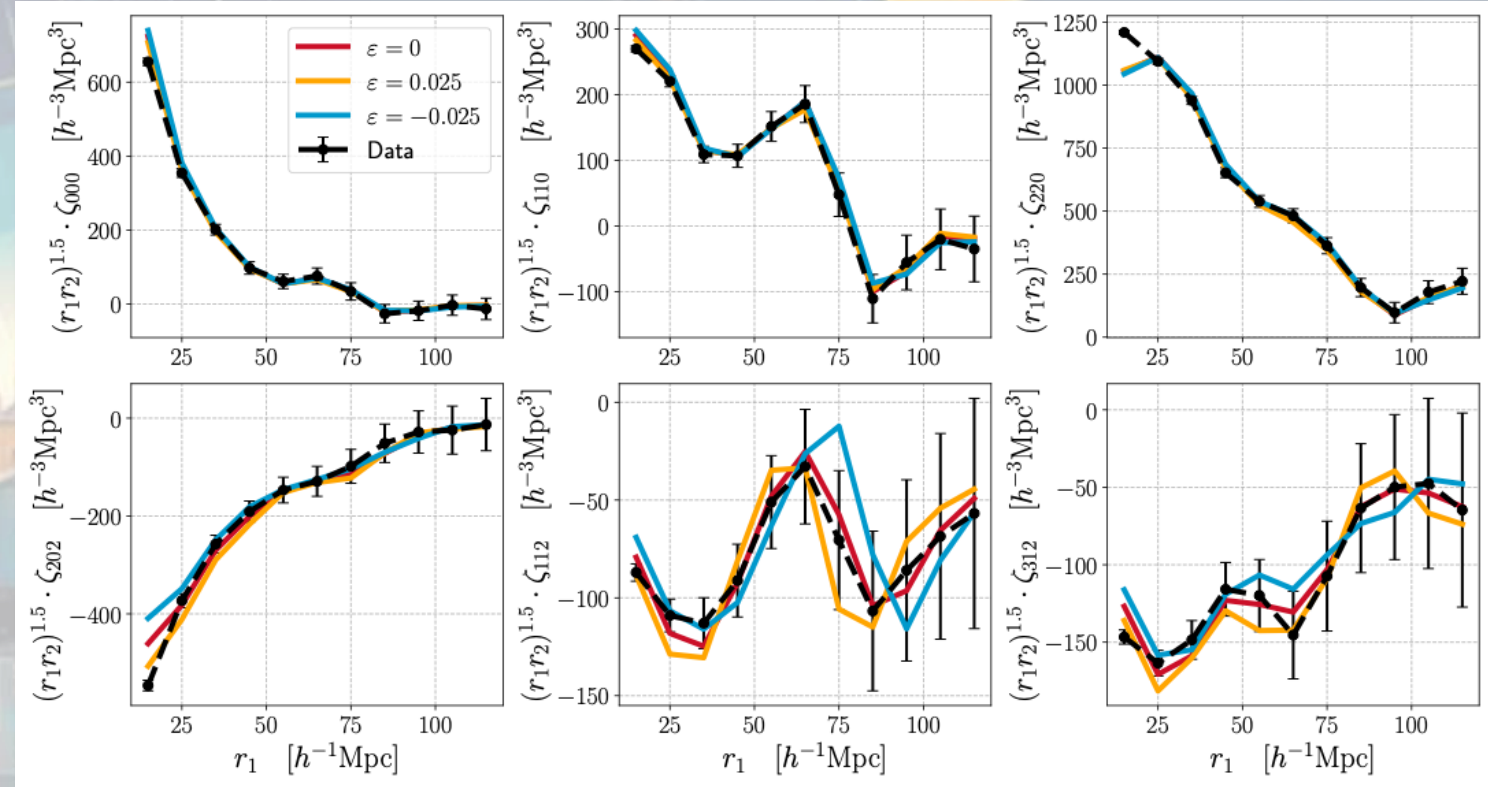
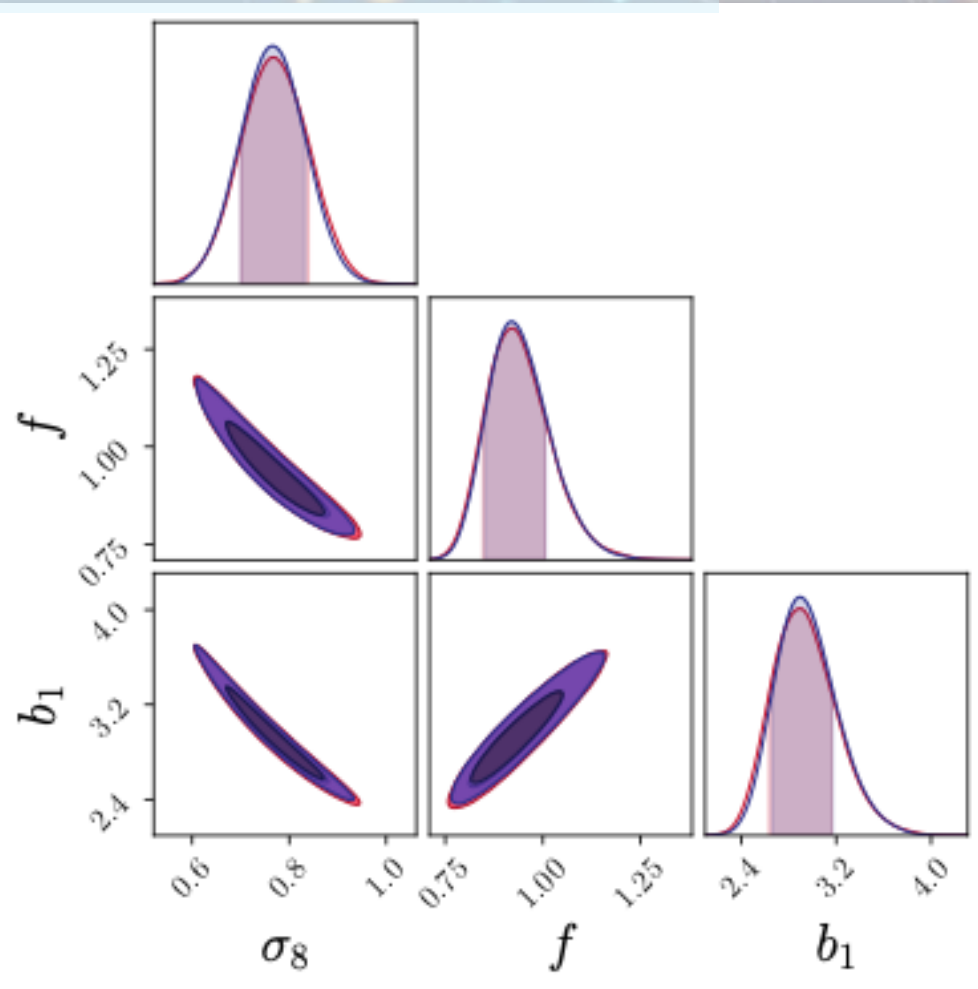


Galaxy 3PCF as cosmological probe.

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Farina, Veropalumbo et al. 2024



Galaxy 3PCF as cosmological probe.

INFN-EUCLID. Sez. Genova. Activity Report 2023-2024

And more to come (especially on the 3PCF side)....

