

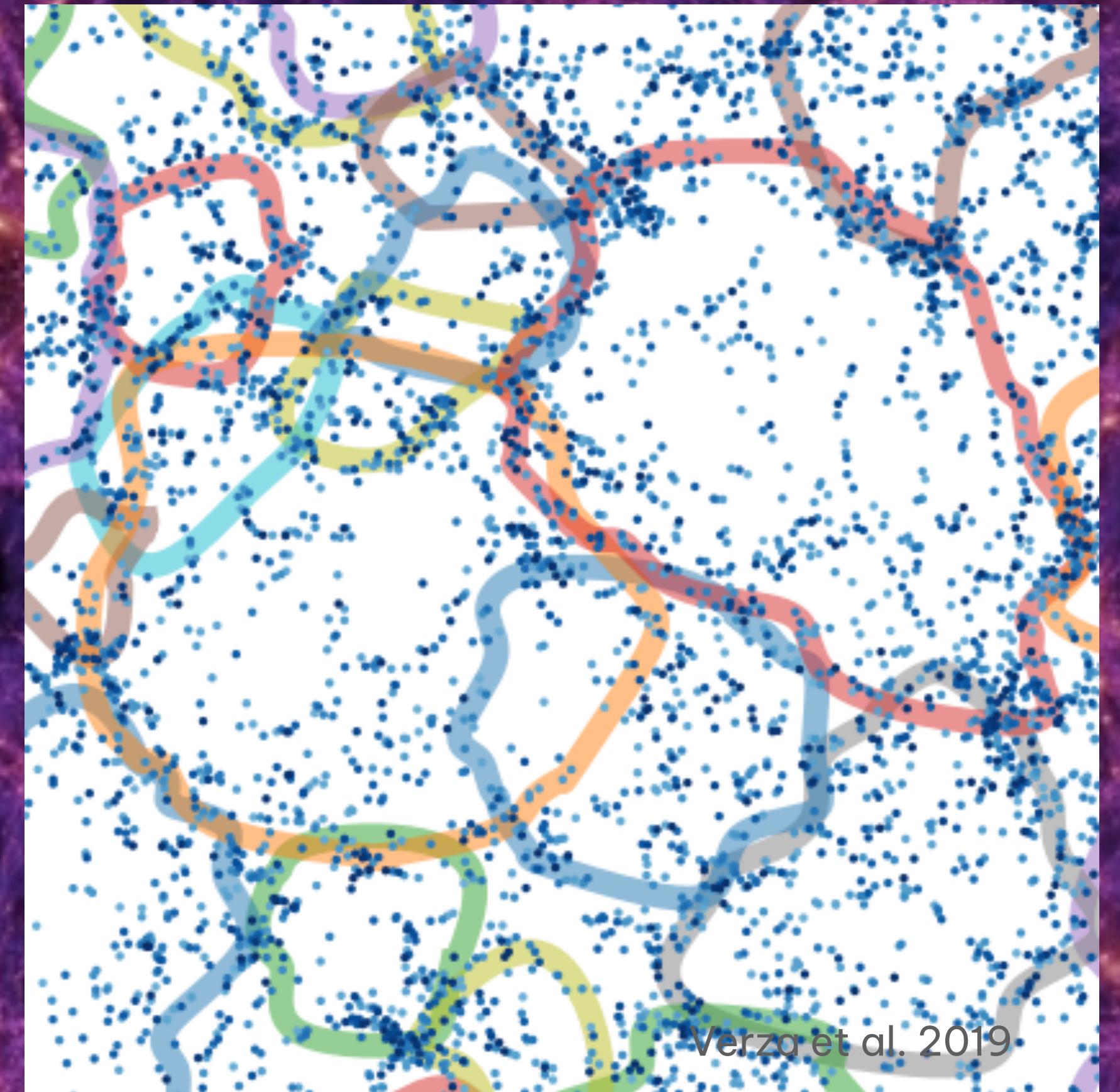
Cosmology with cosmic voids

Giulia Degni

WST the Wide field Spectroscopic Telescope: surveying the Universe in the 2040's and beyond

- Large underdense structures in the Universe
- Multiscale sensitivity: $10 - 100 h^{-1}\text{Mpc}$
- Interpretable as spatially distinct components of the cosmic web
- Most linear structures in the Universe: simple dynamic
- Dominated by dark energy
- Sensitive to diffuse components
- Sensitive to theories of relativity

WP5 - Underdense Structures (Voids)



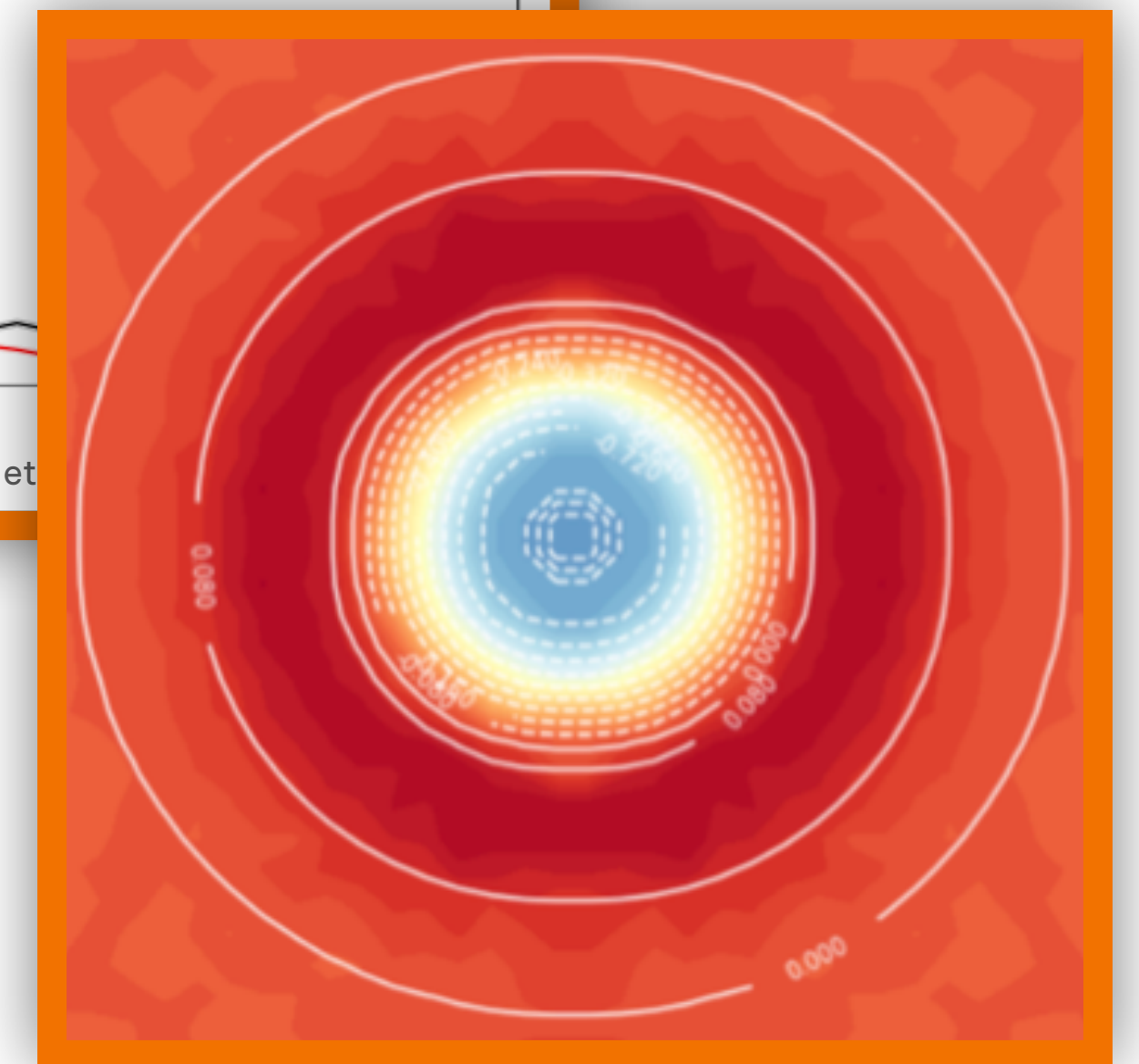
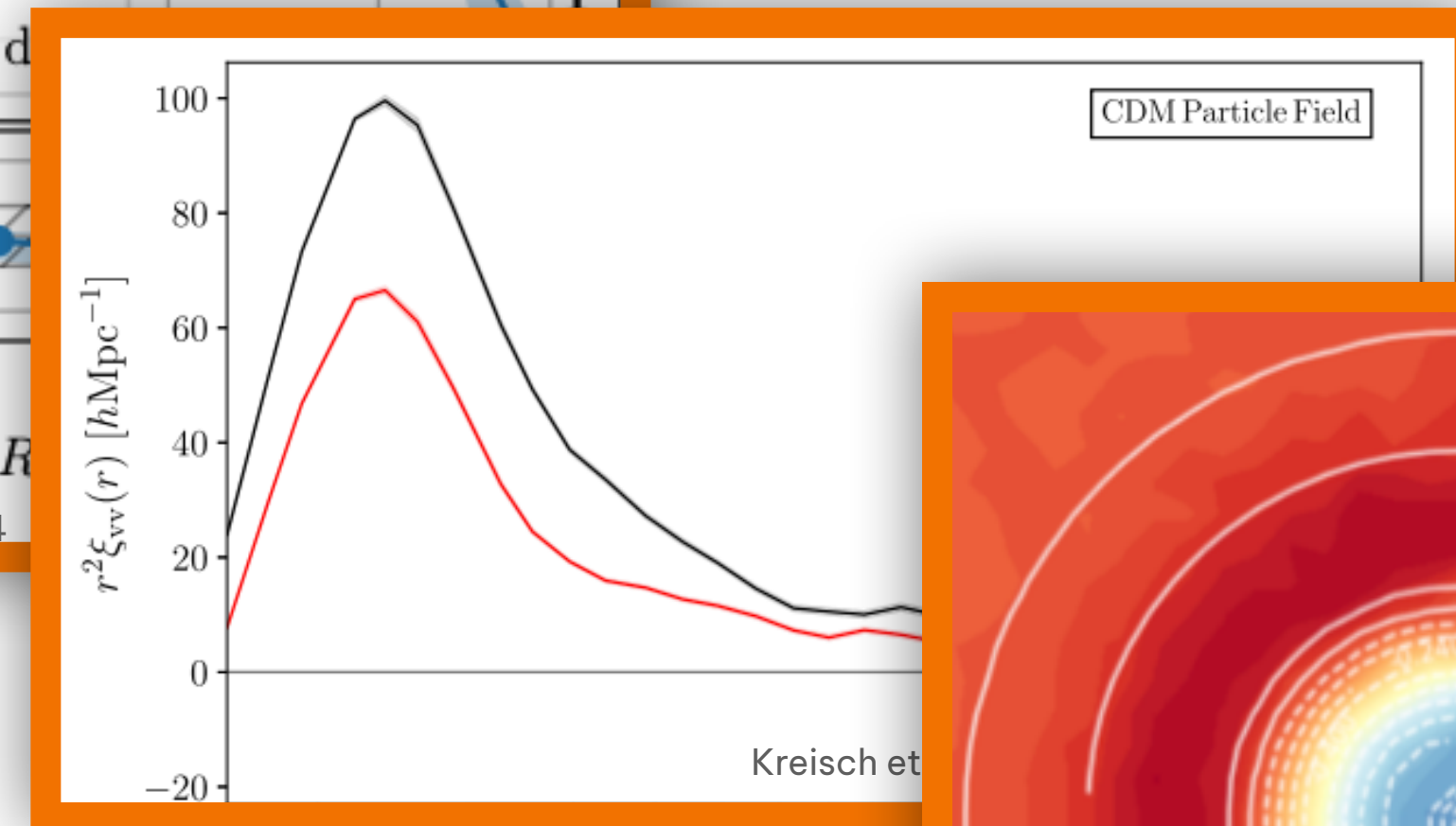
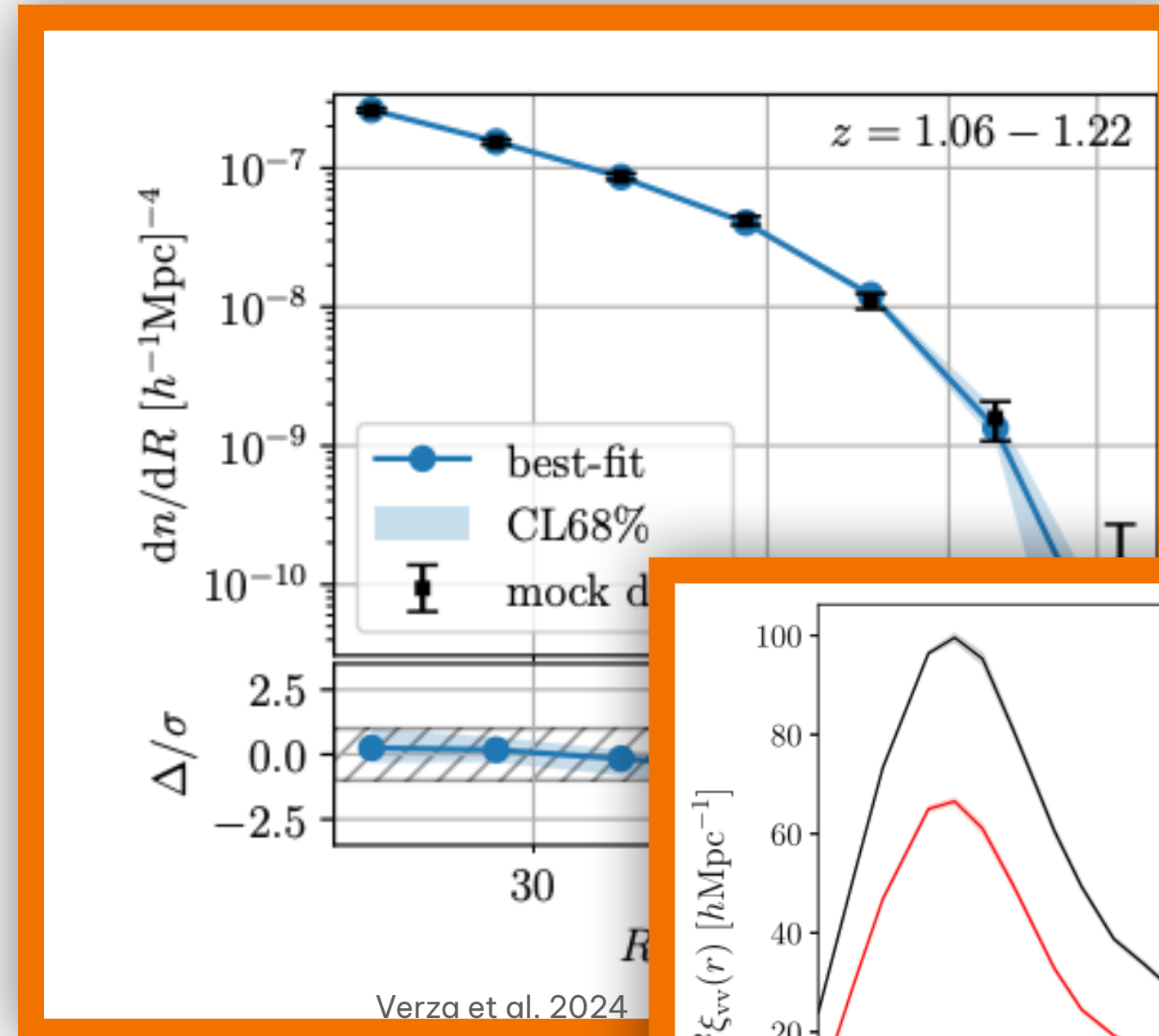
Millennium simulations

Void observables

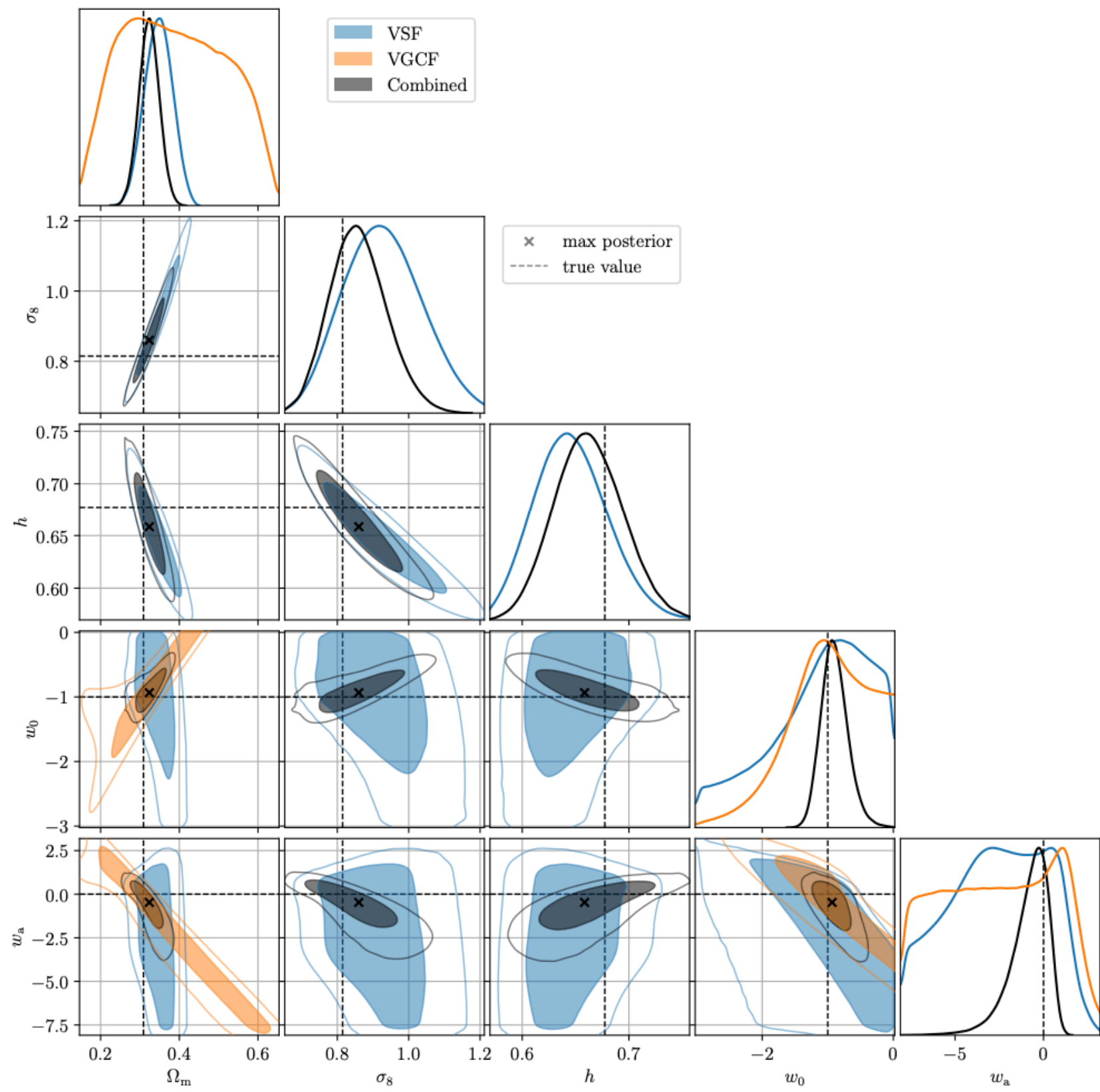
Void abundance: *void size function (VSF)*

Void clustering: *void-void auto-correlation function*

Void shape: *void-galaxy cross-correlation function (VGCF)*

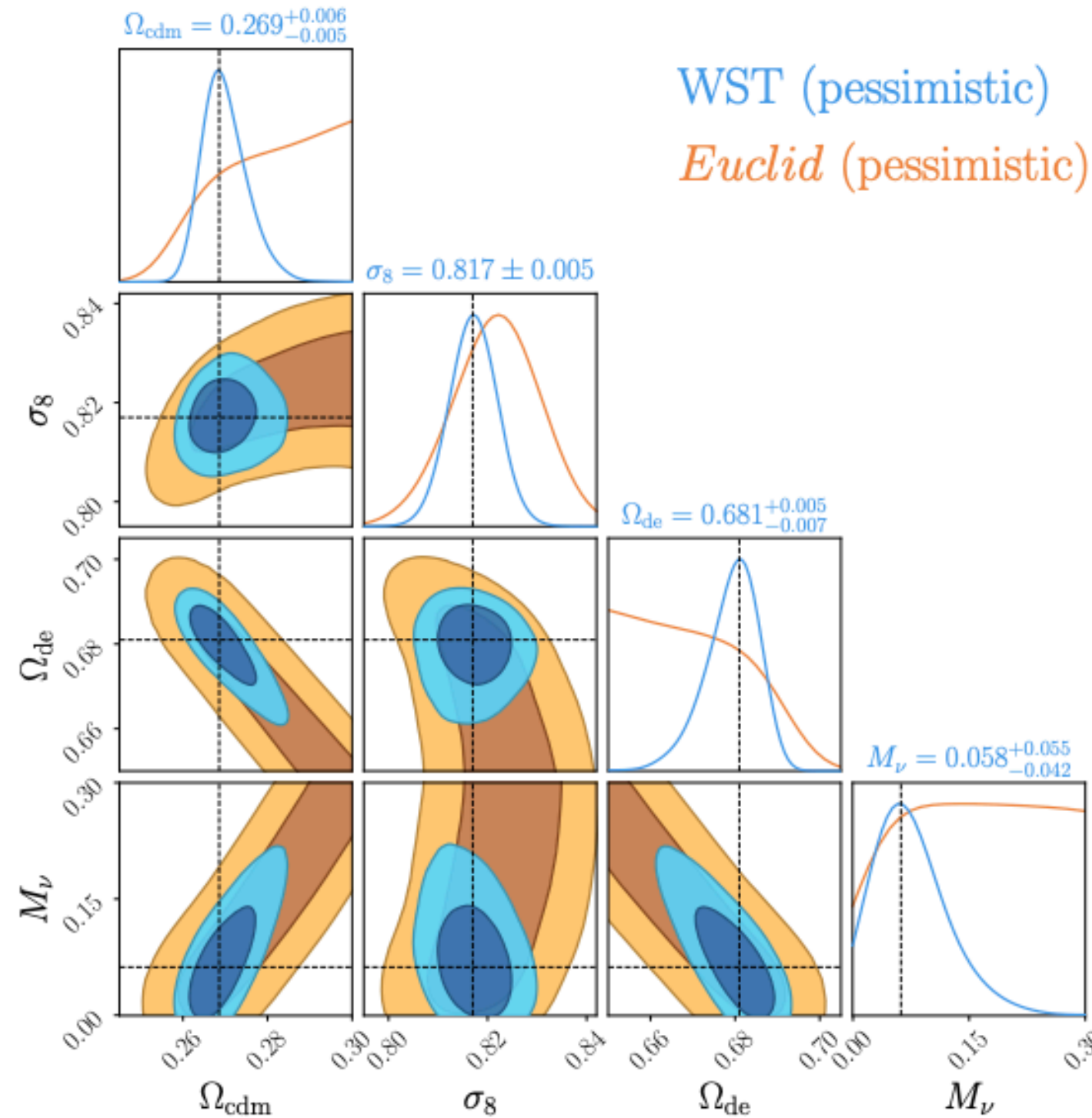


Constraining cosmological parameters with voids



Combining constraints from VGCF and VSF

Verza et al. 2024



Constraints from the VSF

WST Science White Paper, 2024

