Three points for discussion:

1. On halo OVI and the results of the TNG model
2. On the TNG50 simulation and its utility for studying outflows <-> internal galaxy structure
3. On new CGM simulations, small-scale structure, and overcoming the resolution issue
1. On halo OVI and the results of the TNG model

- TNG seems fully consistent with low-z OVI data... we’re done?
  - Nothing fancy: no NEQ, no small-scale...
- Matching obs. sample/selections is critical
  - How to interpret idealized tests, i.e. single cloud runs?
- Diversity (@ fixed M*,z,b) is high! Statistics needed...

DN, Kauffmann, Pillepich+ (2018)
$M_{\text{halo}} \sim 10^{12}$

$N_{\text{OVI}} \ [\text{log cm}^{-2}]$

$z = 0$
$M_\star \sim 10^{10.5} \, M_{\odot}$

$M_{\text{halo}} \sim 10^{12.0} \, M_{\odot}$
2. On the TNG50 simulation and its utility for studying outflows <-> internal galaxy structure

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Incorporates (unchanged) the ‘TNG’ galaxy formation model:
1. Ideal MHD
2. New low-state AGN FB, pulsed directional kinetic ‘wind’
3. Revised galactic-scale wind FB (SH03 kinetic/decoupled)

• 15x mass resolution of TNG100, ~few hundred pc scales
• Push ‘effective’ feedback models to their limits
• What is the role of effective feedback models?
• Sub-grid inputs at \textit{injection}, not related to any obs. phase
  • E.g. $\eta$ is a continuous function of $(M^*, z, r, v_{\text{cut}}, \text{phase})$
  • How to capture small-scale sim results?
• Despite model simplicity, outflows are complex
  • Multi-phase in $(T, \rho, v, Z)$
  • $v \sim$ few 100s km/s (stellar winds), $> 1000$ km/s (BHs)
3. On new CGM simulations, small-scale structure, and overcoming the resolution issue
3. On new CGM simulations, small-scale structure, and overcoming the resolution issue
$M_{\text{halo}} \sim 10^{12}$

$z \sim 2$