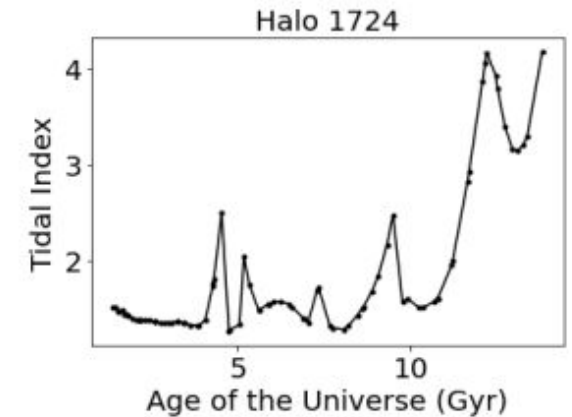
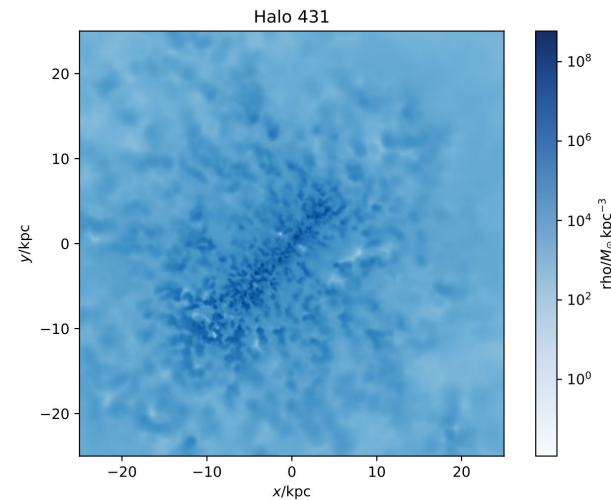


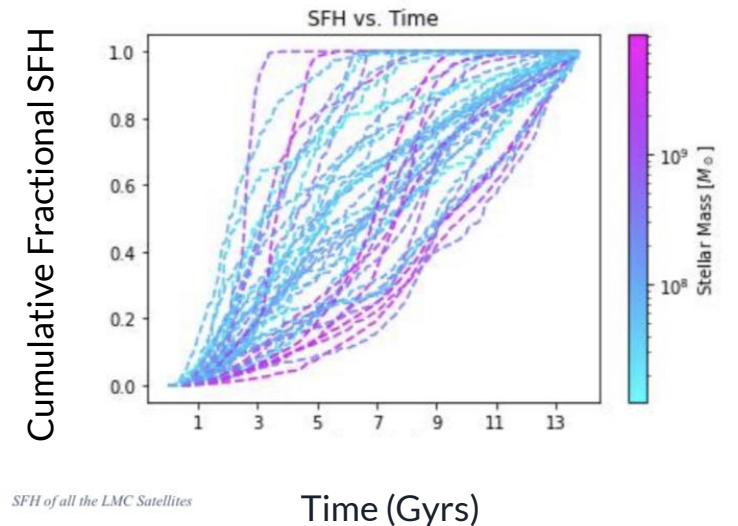
Understanding Isolated LMC Mass Analogs and their Satellites

Oge Okoronkwo - University of Washington

- **GOAL:** Identify isolated LMC mass galaxies and analyzing their interactions over time using Romulus25 and high resolution zoom simulations
 - Studying what the dominant quenching mechanism is for LMC satellites
 - Studying quenched fractions as a function of definition and mass of the LMC analog



Tidal Index calculated over time - a higher number means

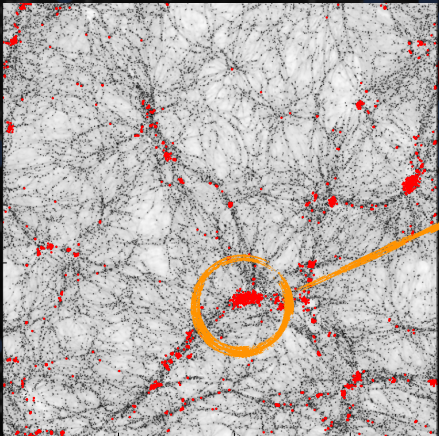


SFH of all the LMC Satellites

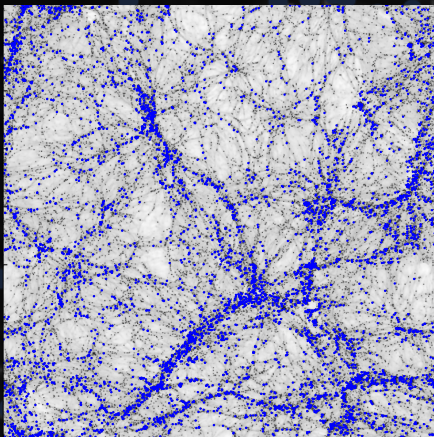
Hydrogen Shows its True Colors

Correlations Between Atomic Hydrogen and Galaxy Color

Clustering Tests



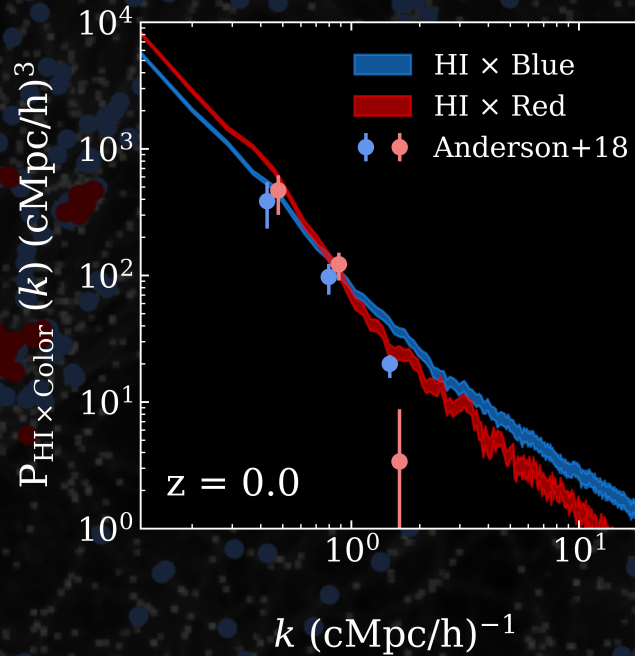
Red galaxies are very clustered



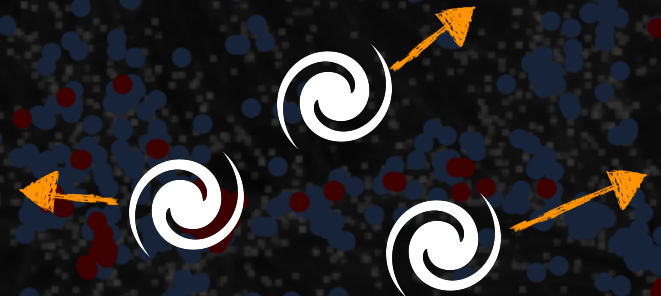
Blue galaxies are spread out

HI-Galaxy Connection

HI-Galaxy Cross-Power Spectra

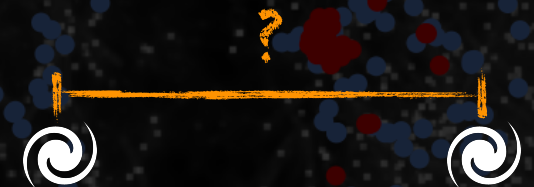


Predictions



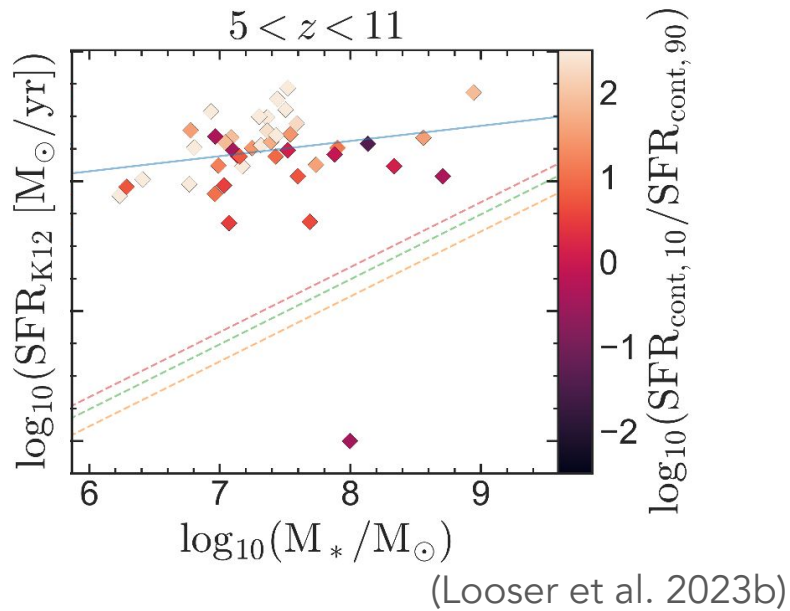
Red and blue galaxies are clustering LESS with time on ALL scales?!

The scale at which galaxy formation affects clustering

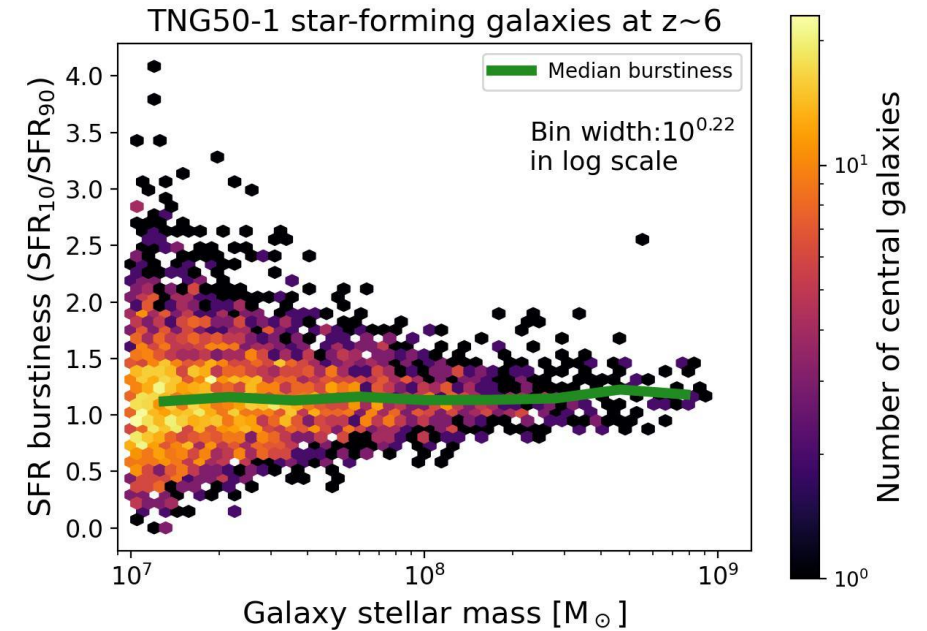


How to simulate bursty star-forming galaxies?

R. Anirudh, Annalisa Pillepich, Matthew C. Smith, Dylan Nelson, Ralf S. Klessen



What about
TNG?

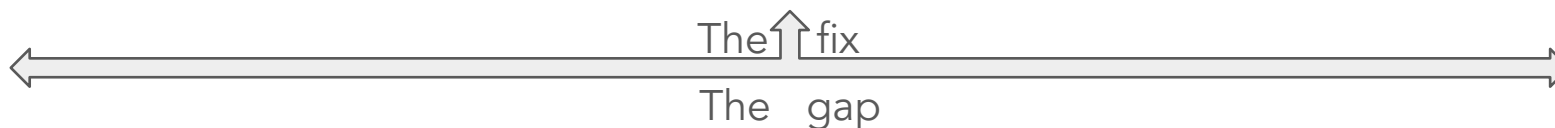


JWST surveys: JADES, CEERS
Rapid bursts/quenching of star formation activity!

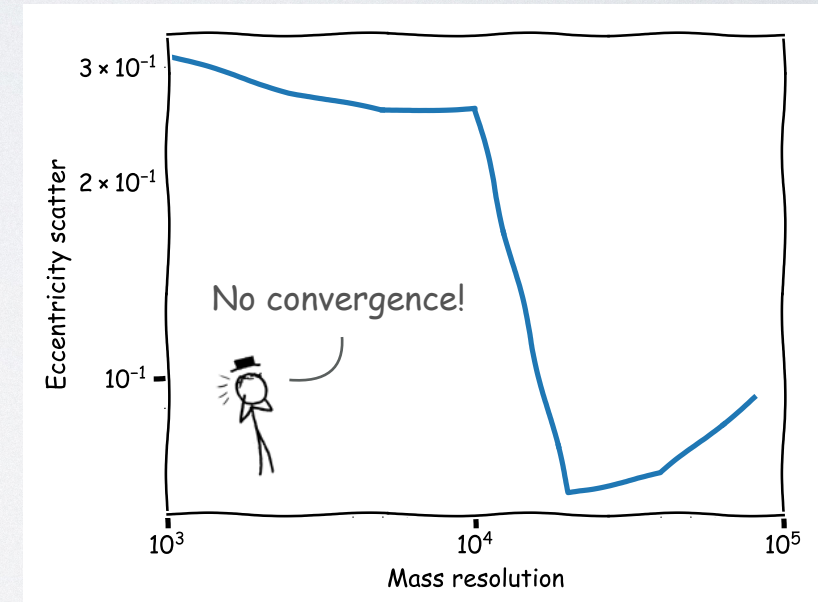
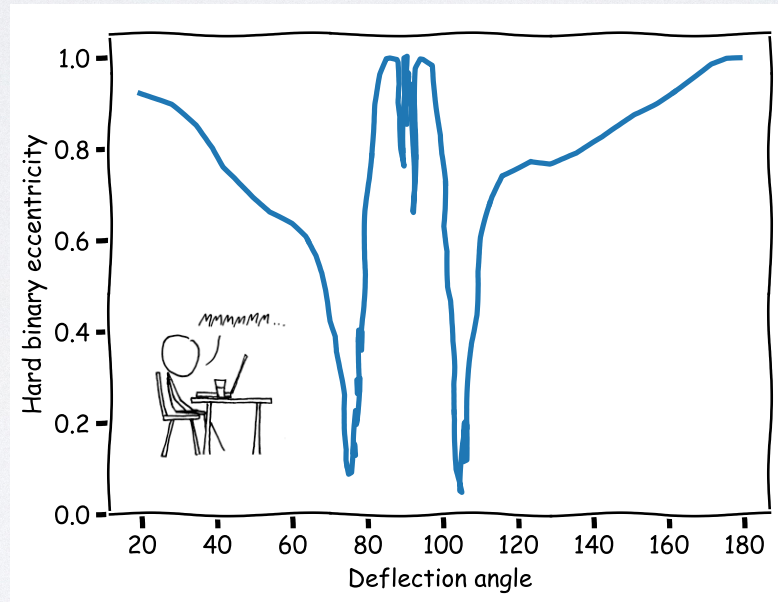
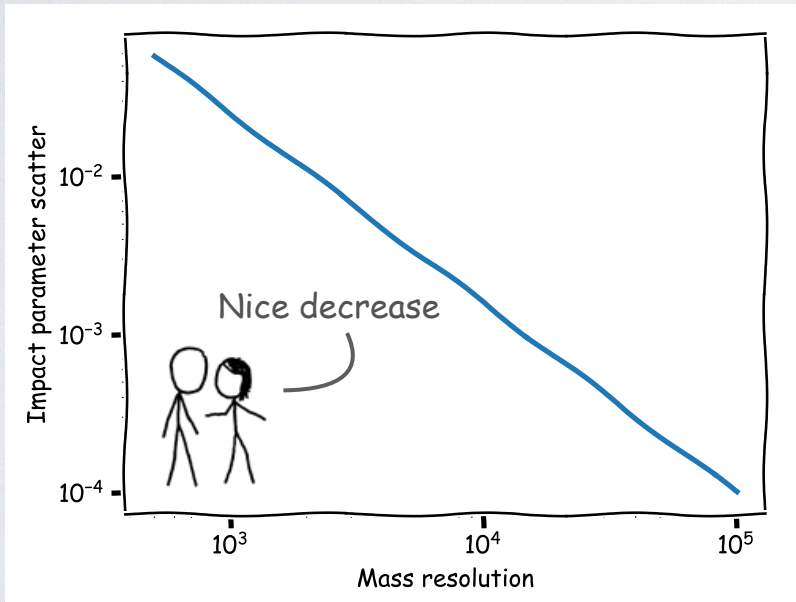
Improved
multiphase ISM
model to resolve
the physics of
 ~ 10 K gas!

TNG50 galaxies do not
reproduce high levels of
burstiness

(R. Anirudh et al. in prep.)

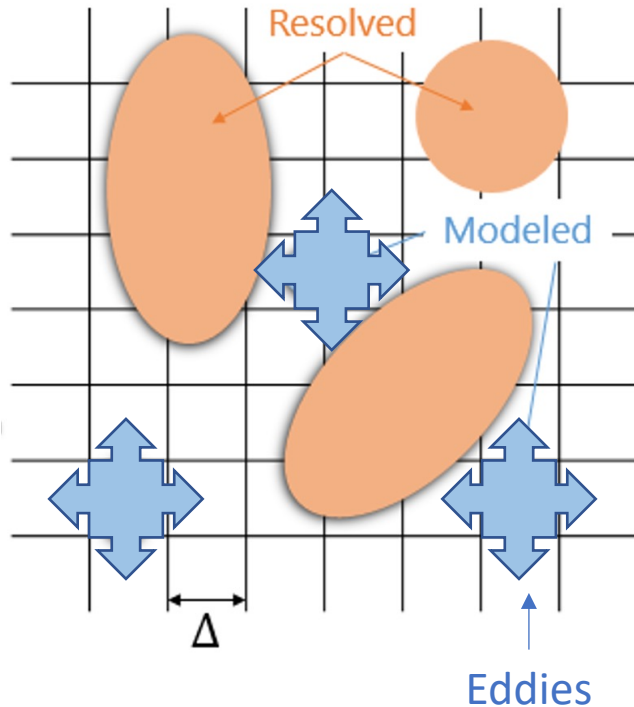


hard black hole binary eccentricity is ~~converged~~ **stochastic**



<https://xkcd.com>

All hydrodynamical simulations require sub-grid models for turbulence.
If they don't, then they're wrong.



Any grid (even particles) **prevents** small-scale turbulent motions to be resolved.

Energy **cannot** flow from large scales to small scales.

Small-scale eddies **should** move between cells.

Introduce **diffusion** to emulate eddy movement.

****Especially wrong in metal distributions****

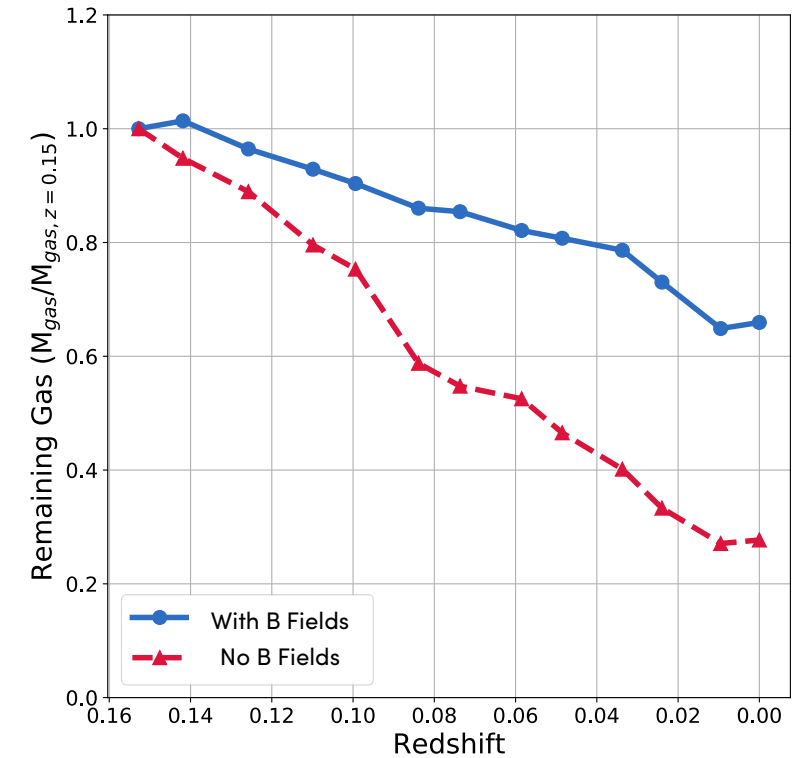
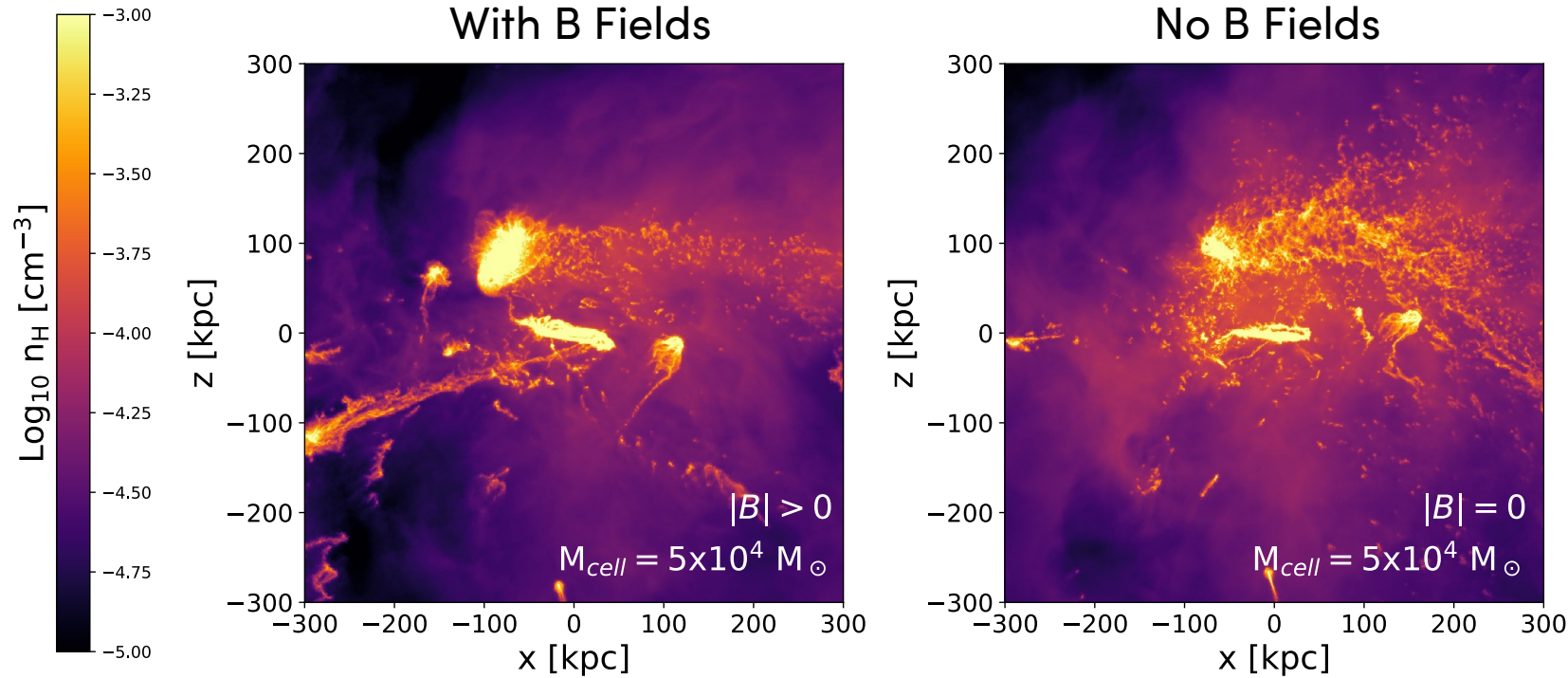


Douglas Rennehan
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arXiv:1807.11509
arXiv:2104.07673

The Role of Magnetic Fields in Satellite Stripping in the CGM of Massive Galaxies

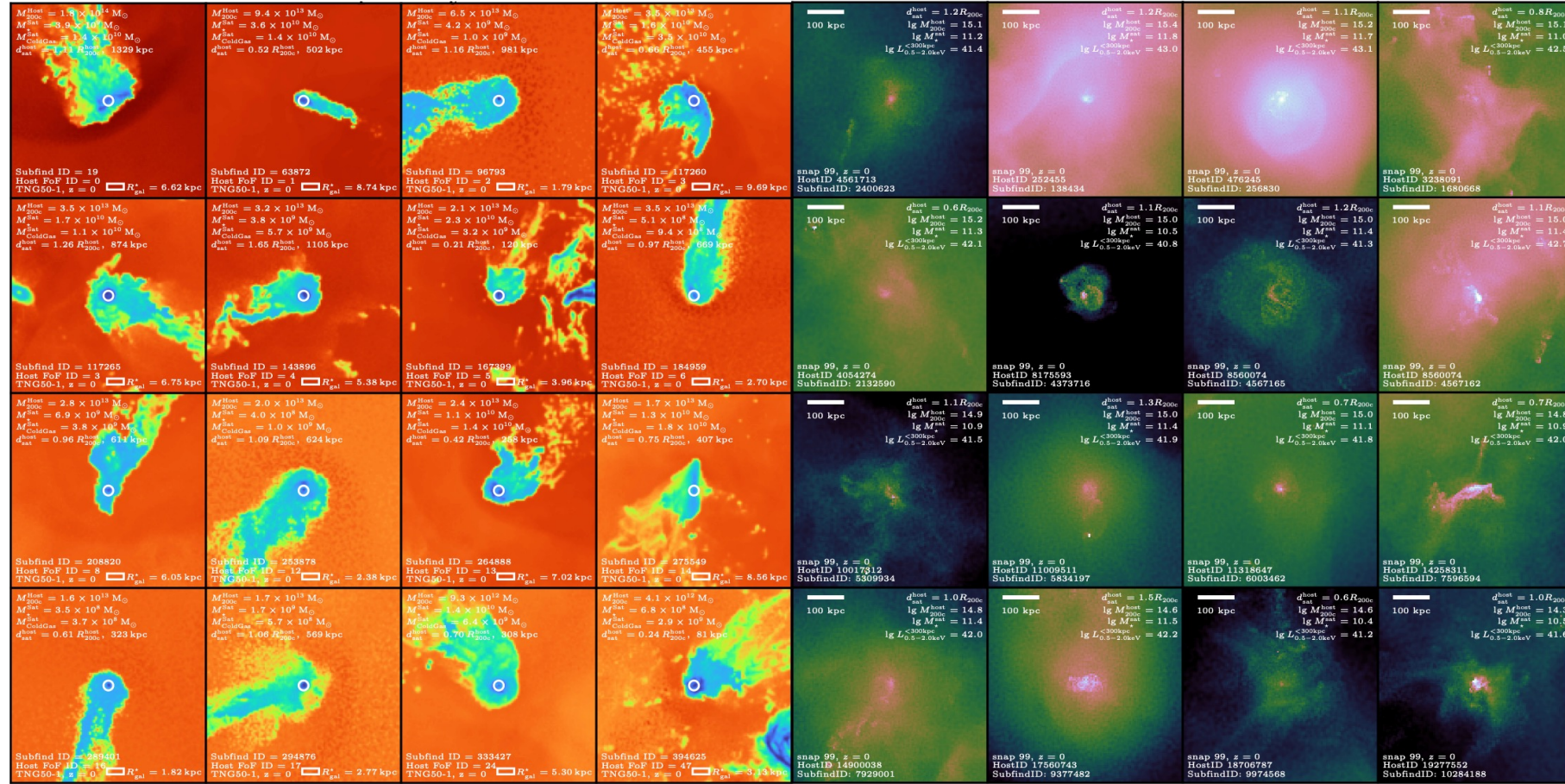
Thomas Rintoul



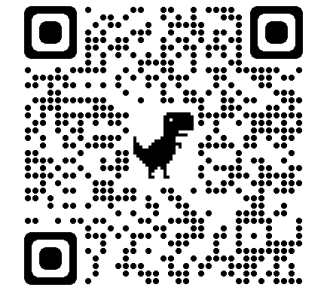
How does the CGM affect satellite galaxies?

How do satellite galaxies affect the CGM?

Eric Rohr, Annalisa Pillepich, Dylan Nelson, Matthew C. Smith



Ram pressure
stripping in
TNG50 jellyfish
galaxies



The CGM
around massive
satellites in
TNG-Cluster

