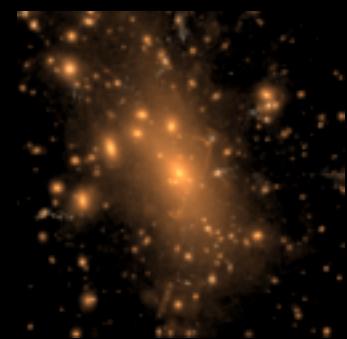
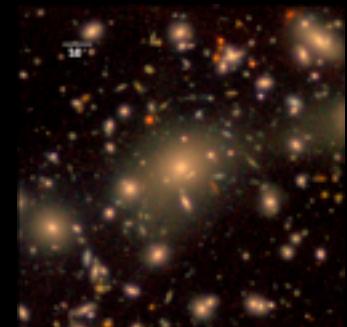


# STELLAR PROFILES OF MASSIVE GALAXIES:

*Hyper Suprime-Cam Survey*

VS.

*Hydrodynamic Simulations*



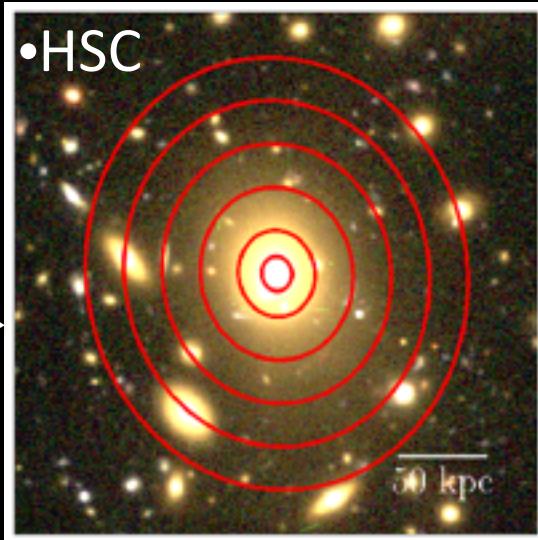
**Felipe Ardila**

Alexie Leauthaud, Song Huang,  
Benedikt Diemer, Annalisa Pillepich,  
Ananth Tenneti,

HSC Collaboration, IllustrisTNG Collaboration



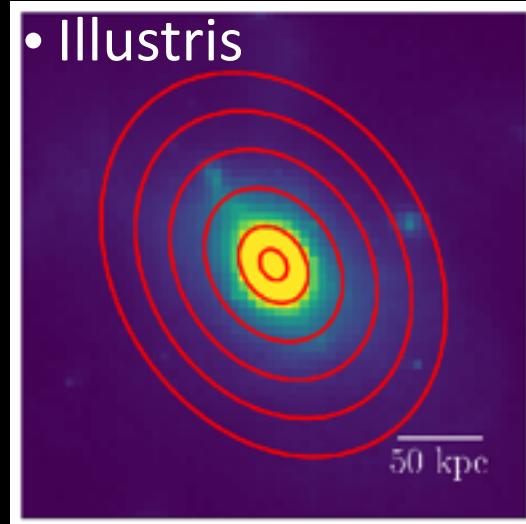
# Observations



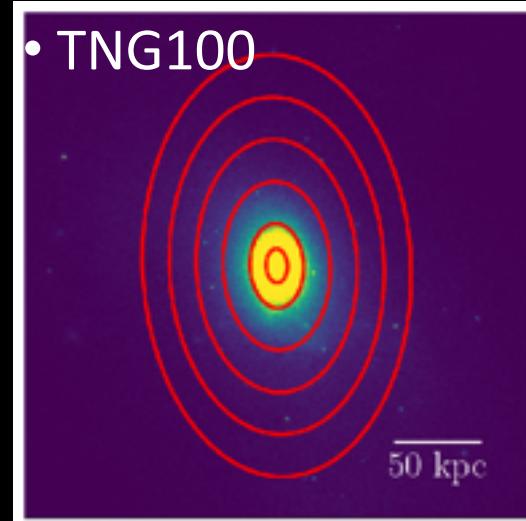
integrated  
light

- Consistent methodology between observations and simulations (Huang et al. 2018)

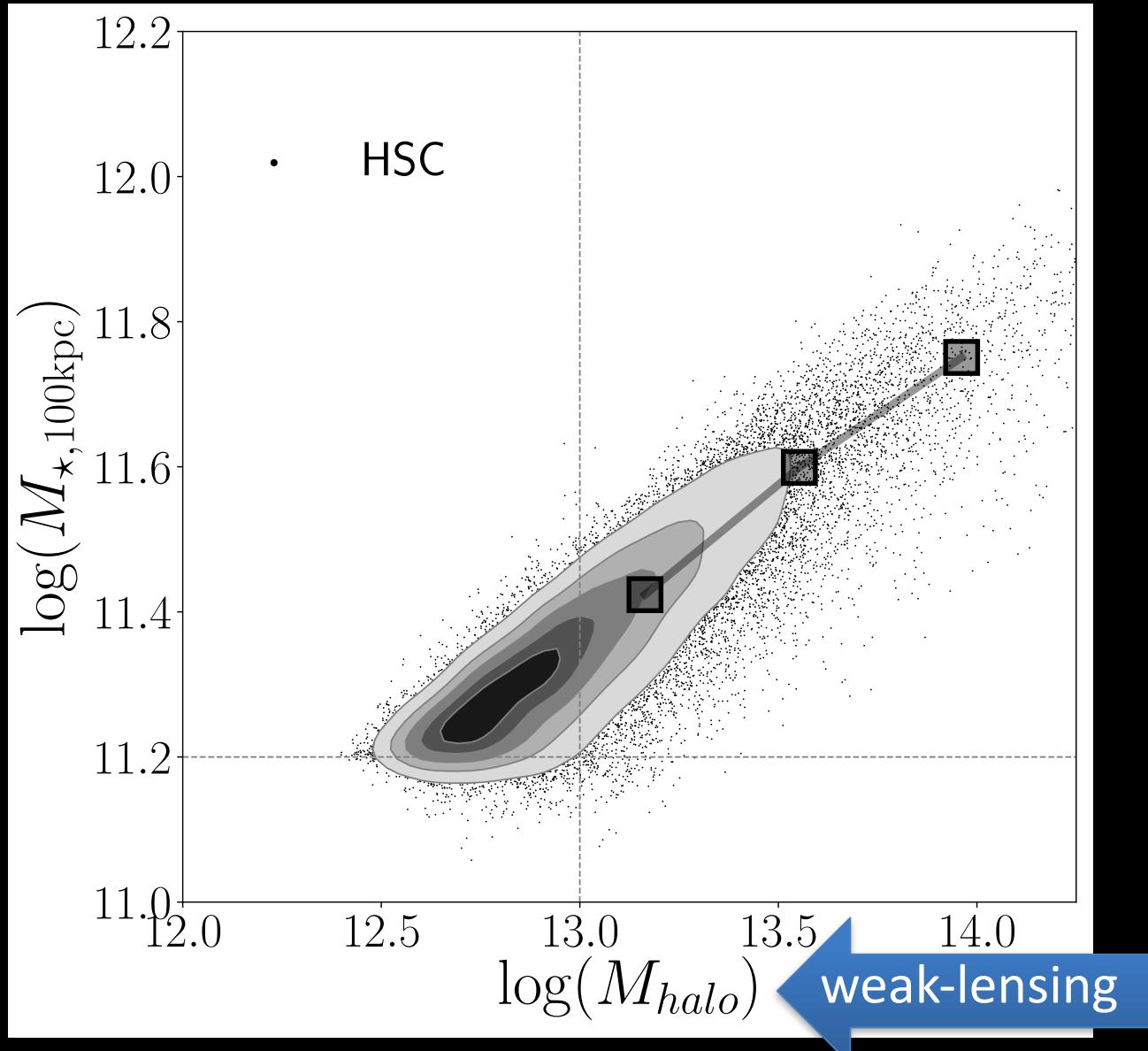
# Hydrodynamic Simulations



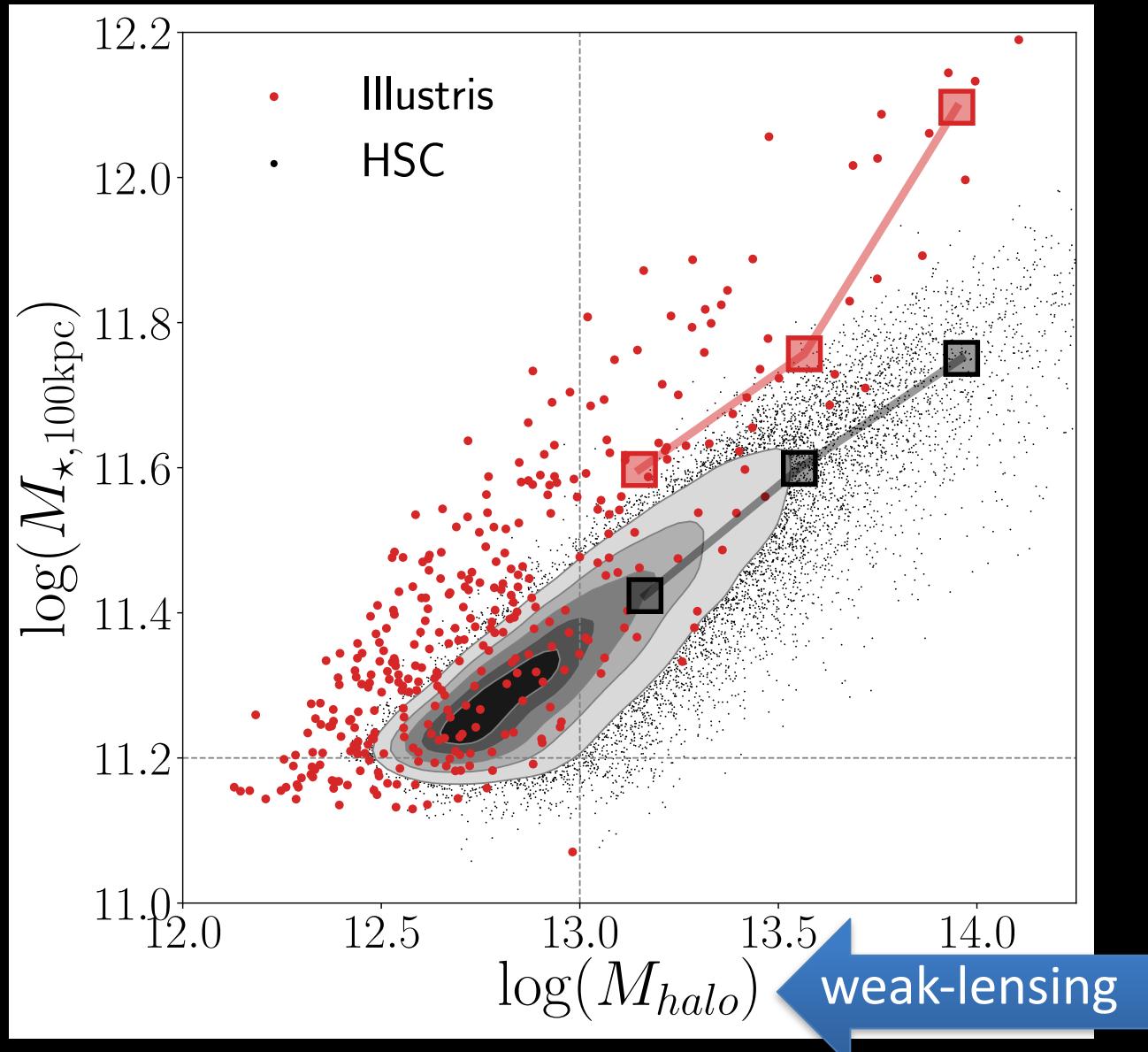
stellar  
mass  
maps



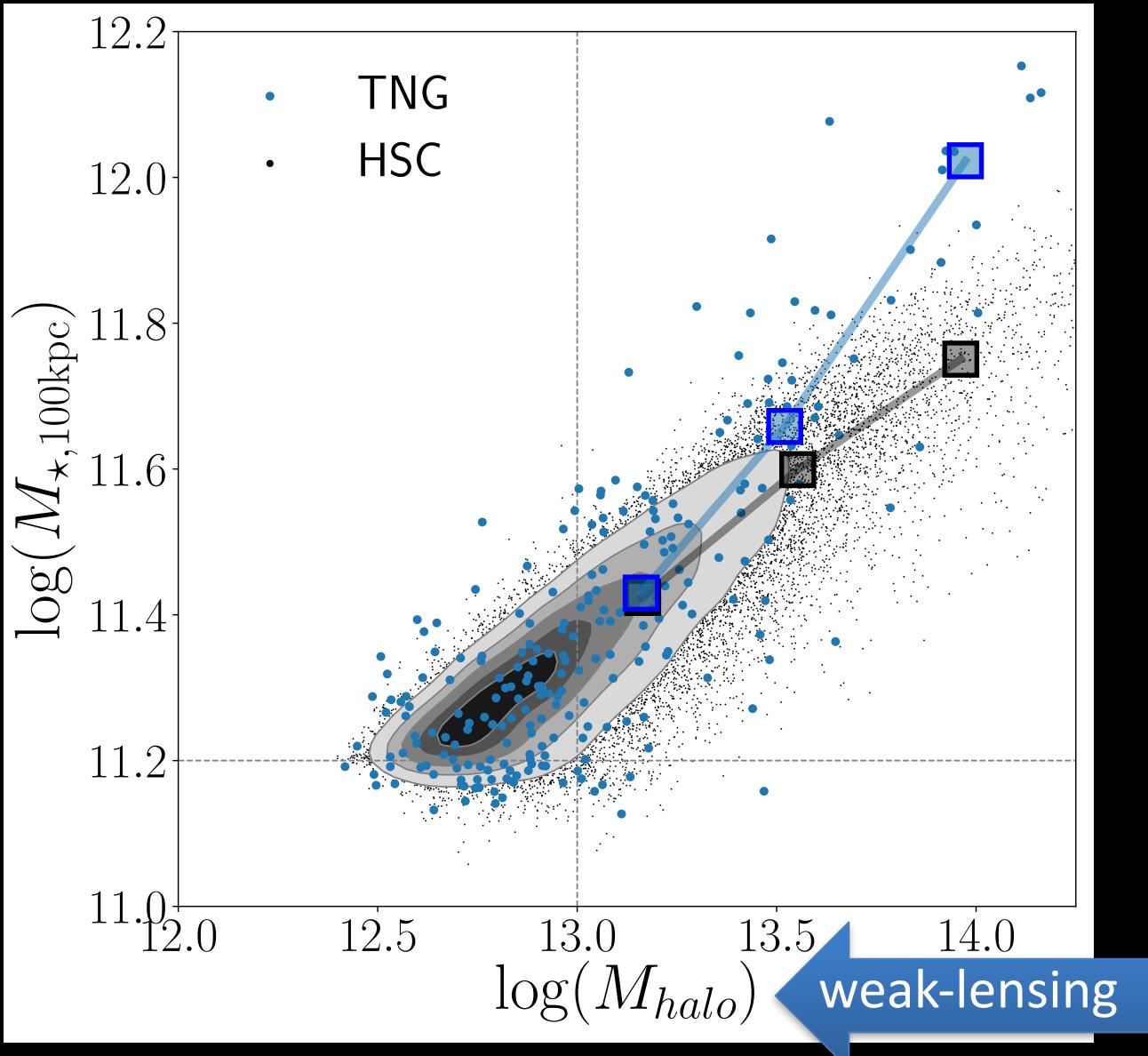
# $M_{\star}^{100\text{kpc}}$ vs. $M_{\text{halo}}$



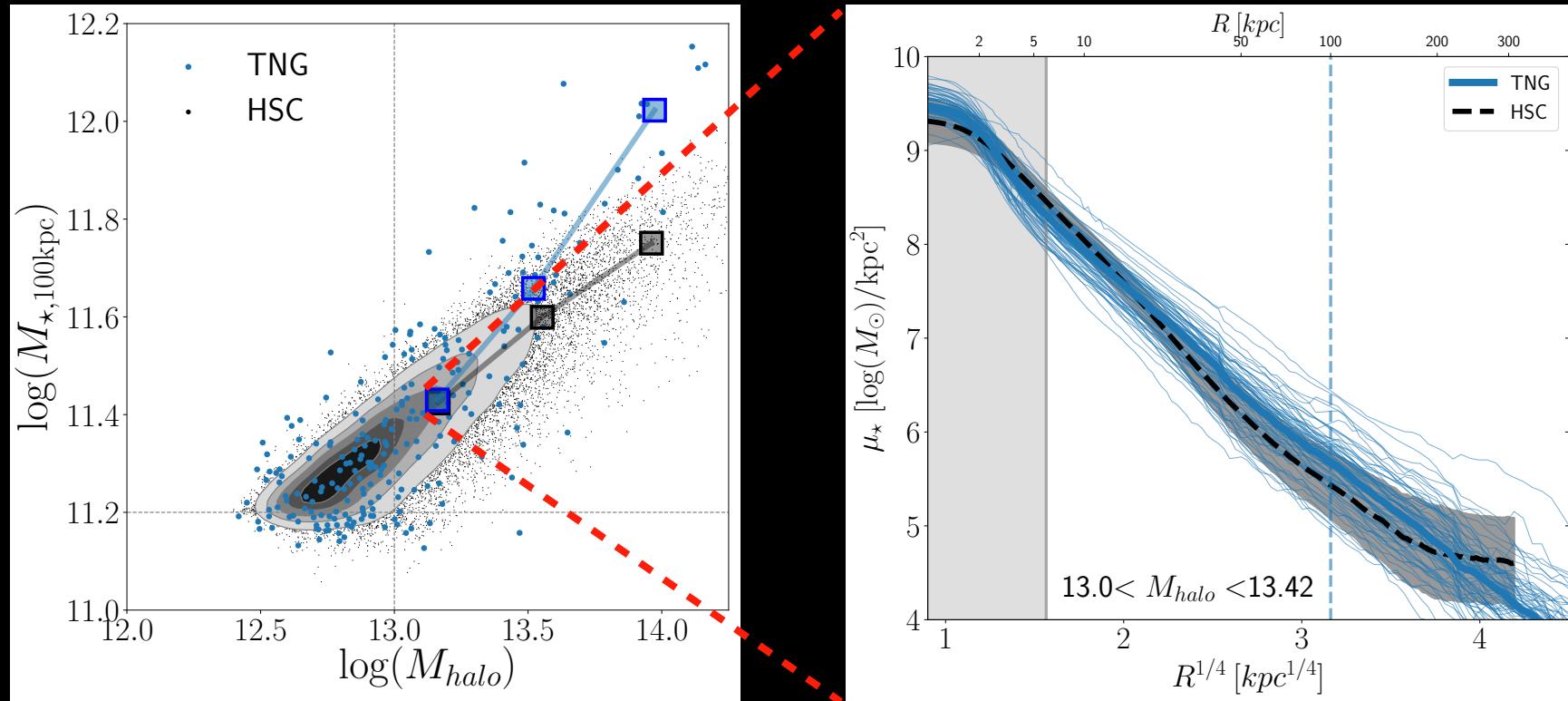
# $M_{\star}^{100\text{kpc}}$ vs. $M_{\text{halo}}$



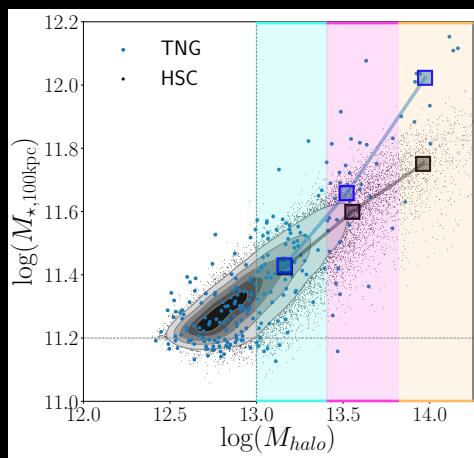
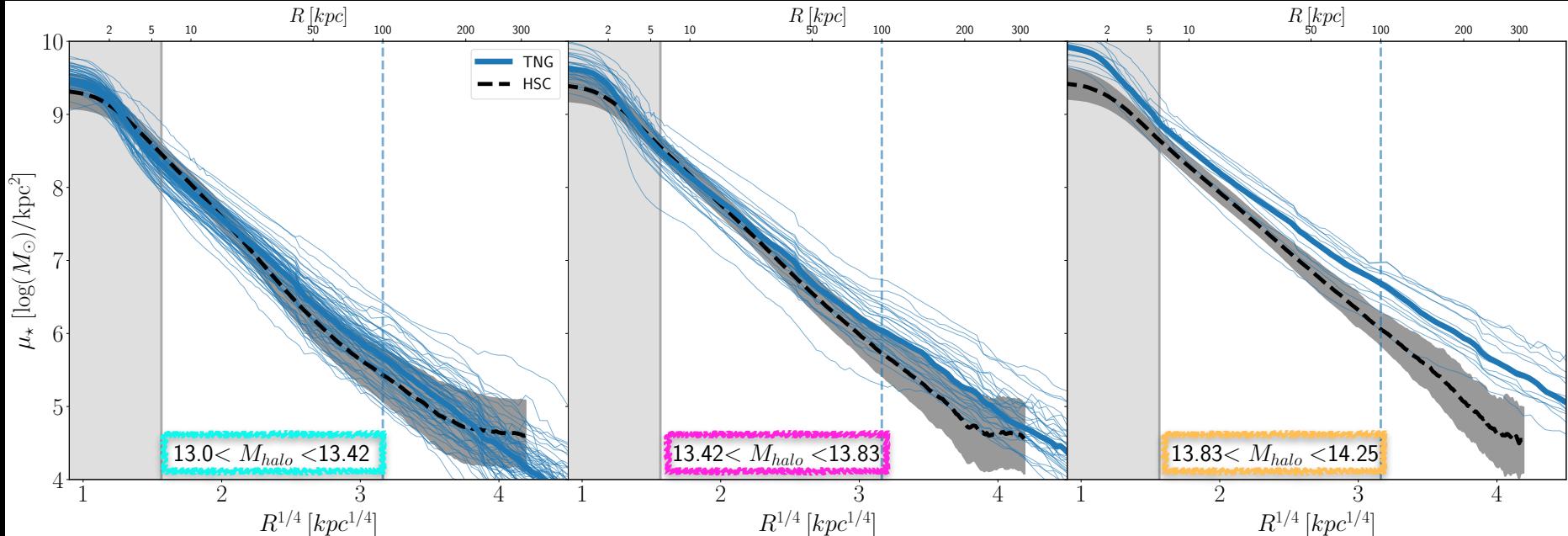
# $M_{\star}^{100\text{kpc}}$ vs. $M_{\text{halo}}$



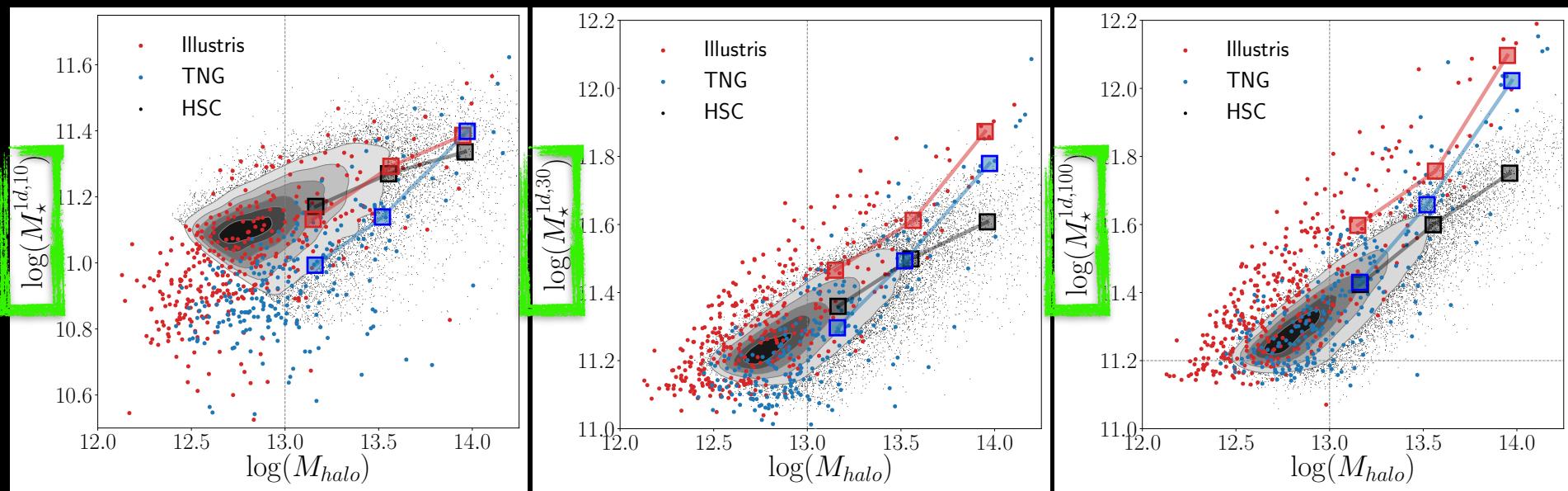
# $M_{\star}^{100\text{kpc}}$ vs. $M_{\text{halo}}$



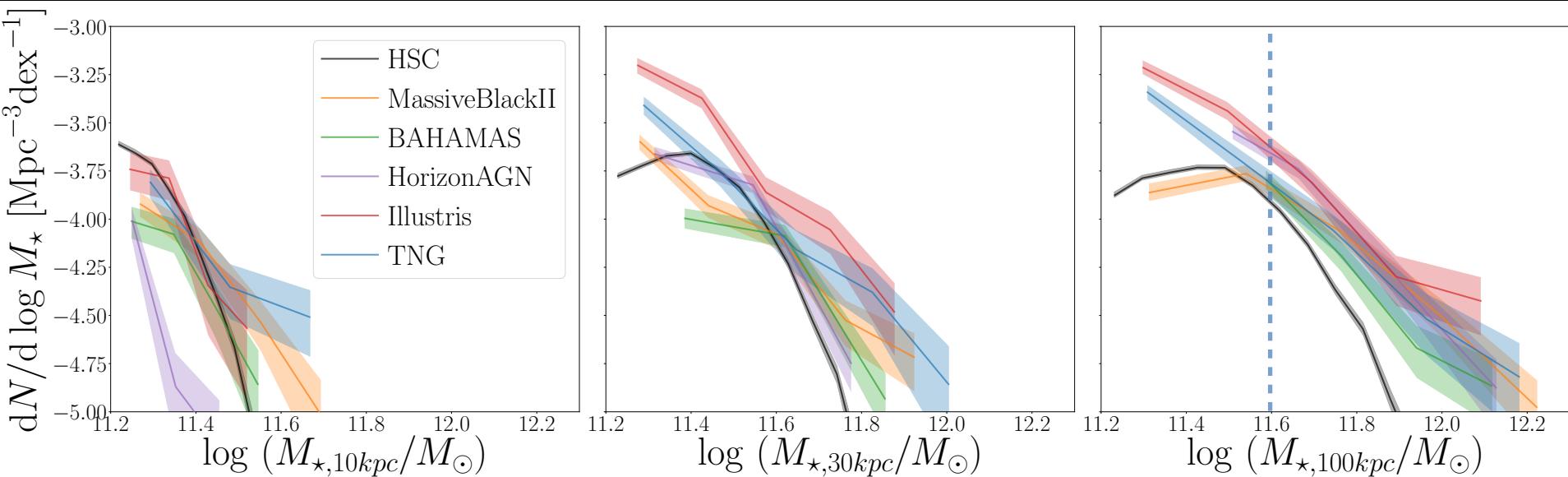
# $M_{\star}^{100\text{kpc}}$ vs. $M_{\text{halo}}$



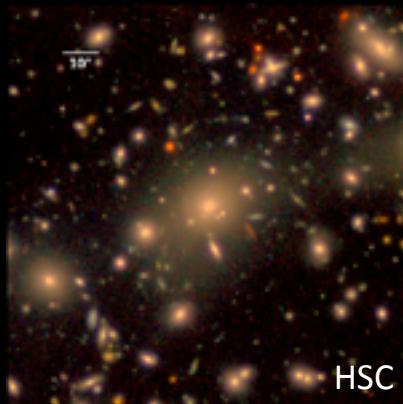
# $M_\star^{10\text{kpc}}, M_\star^{30\text{kpc}}, M_\star^{100\text{kpc}}$



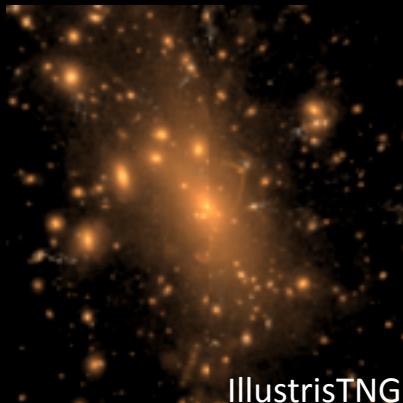
# Stellar Mass Functions



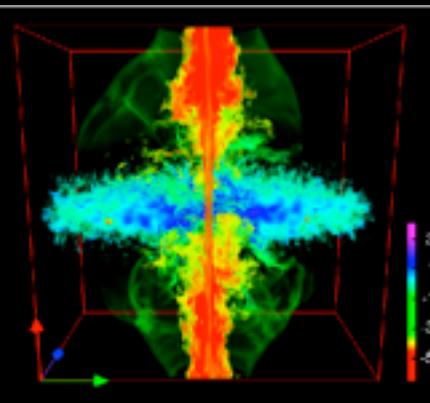
# Future work:



vs.

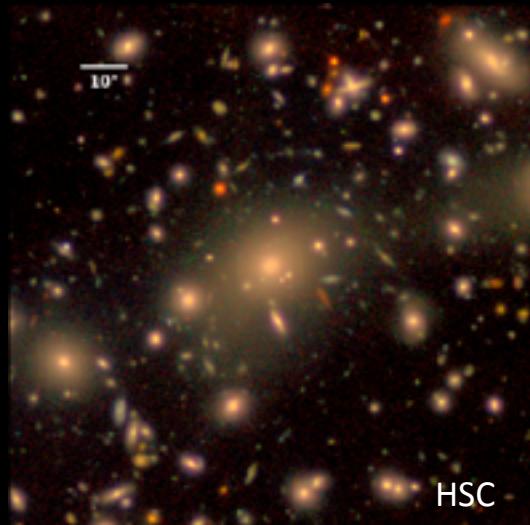
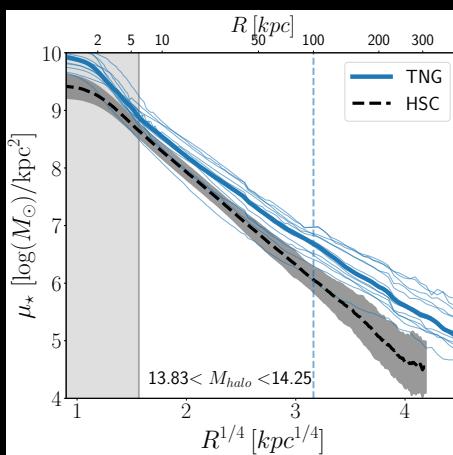
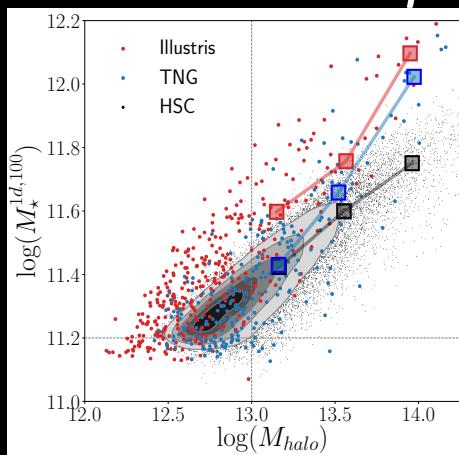


**X-ray data:** help calibrate  
the simulations further  
– baryonic effects  
– AGN feedback



# Main Takeaway:

Stellar profiles of massive galaxies: hydro simulations agree well with observations in inner regions, *not so well (too much mass) in extended stellar envelopes*



vs.

