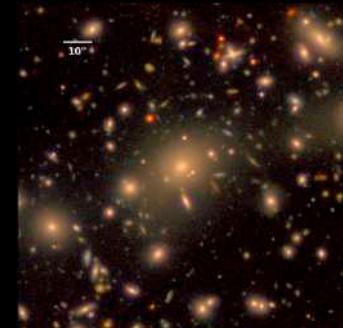


# Stellar Profiles of Massive Galaxies:

*Hyper Suprime-Cam Survey*

VS.

*Hydrodynamic Simulations*



**Felipe Ardila**

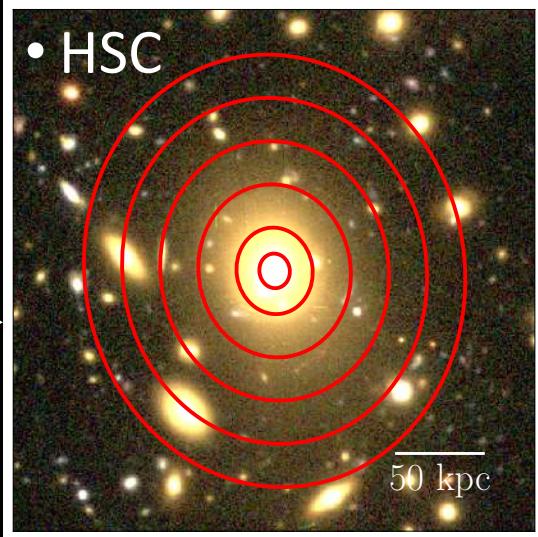
Alexie Leauthaud, Song Huang,  
Benedikt Diemer, Annalisa Pillepich,  
Ananth Tenneti,

HSC Collaboration, IllustrisTNG Collaboration



# Observations

integrated  
light



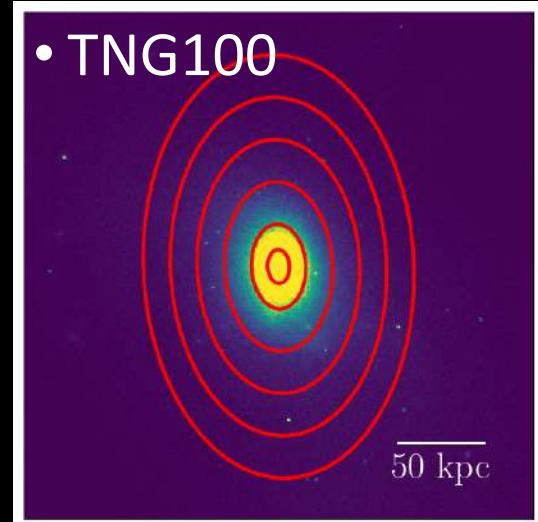
- Consistent methodology between observations and simulations  
(Huang et al. 2018)

# Hydrodynamic Simulations

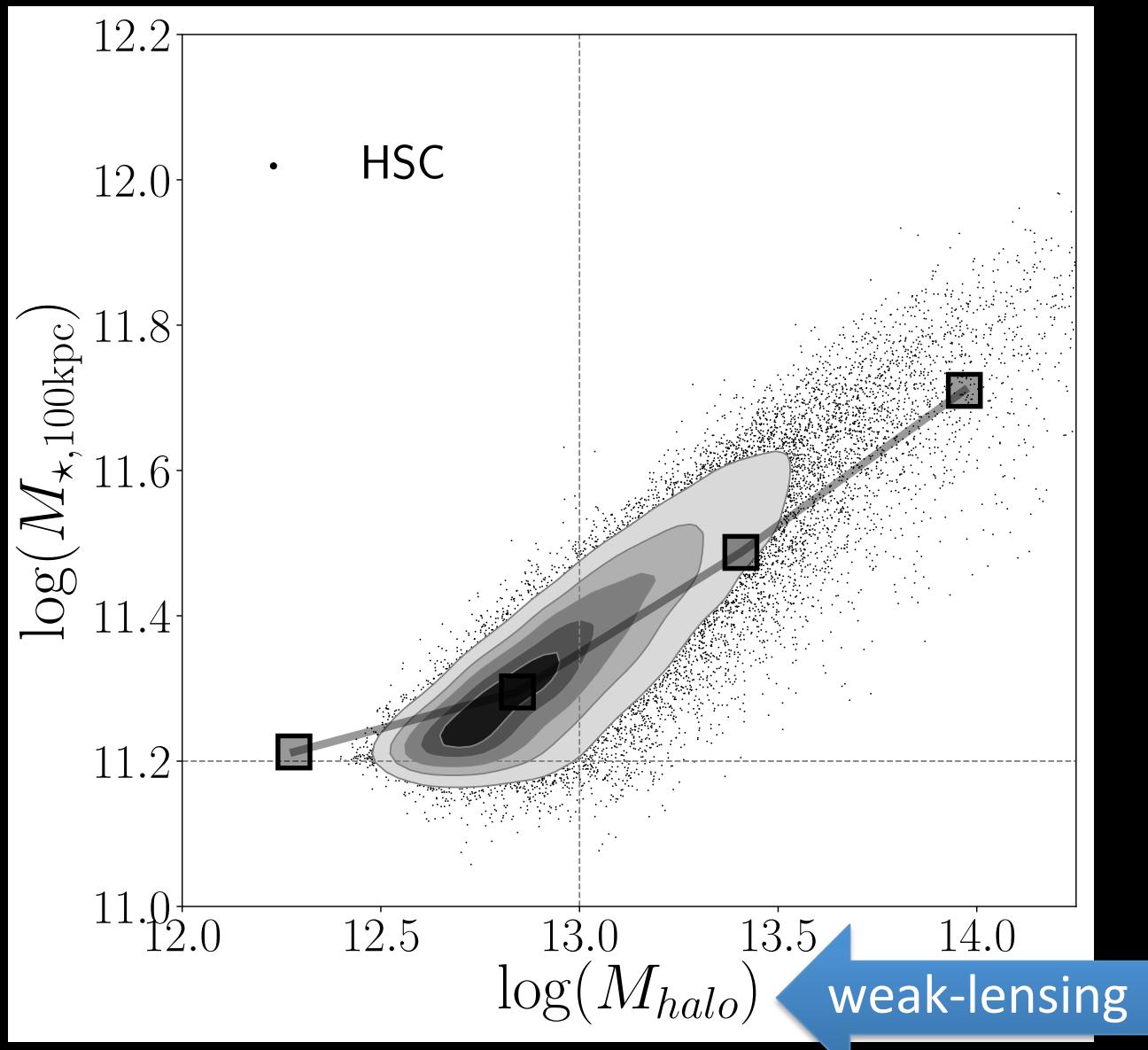
• Illustris

50 kpc

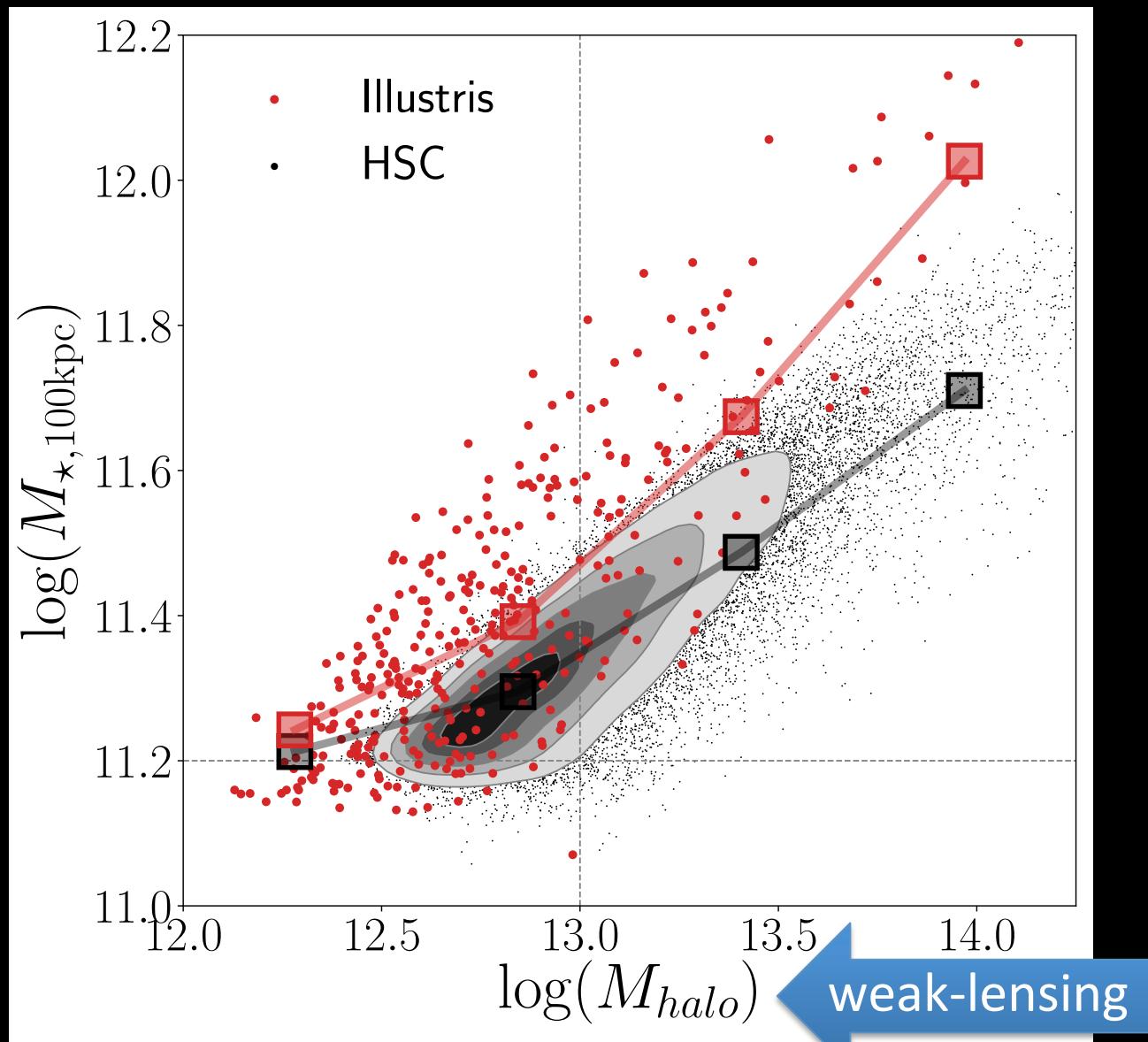
stellar  
mass  
maps



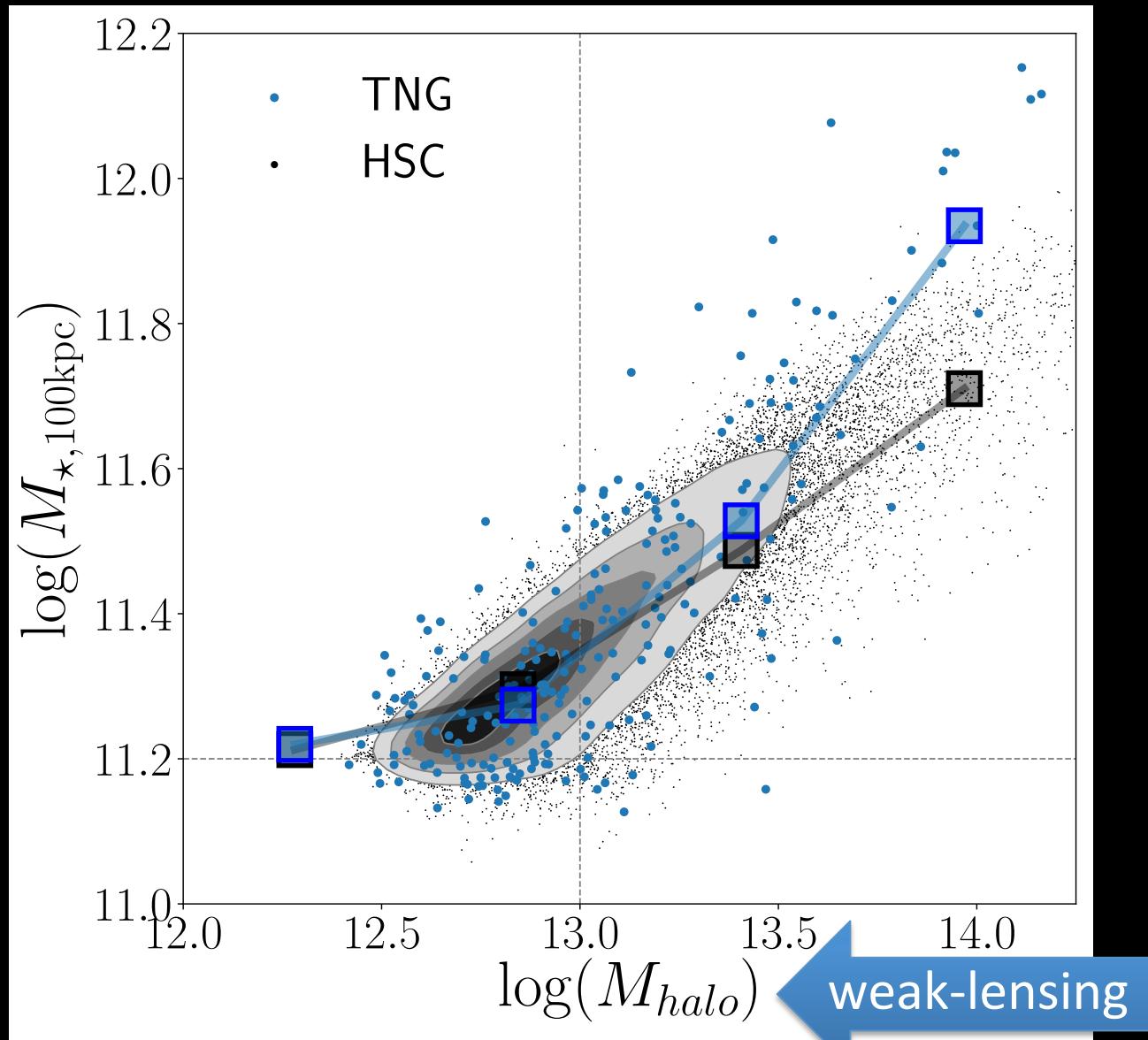
# $M_{\star,100\text{kpc}}$ vs. $M_{\text{halo}}$



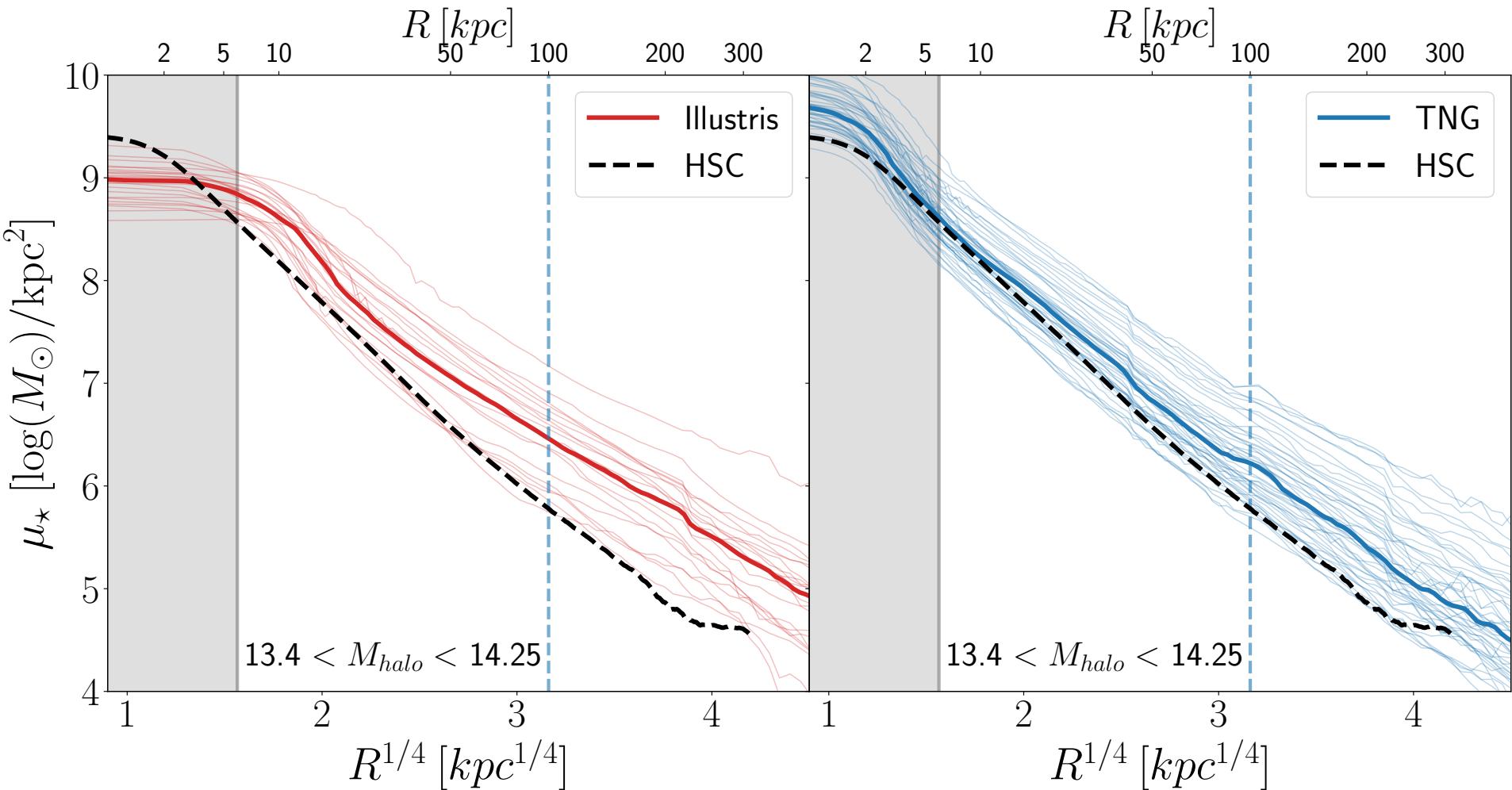
# $M_{\star,100\text{kpc}}$ vs. $M_{\text{halo}}$



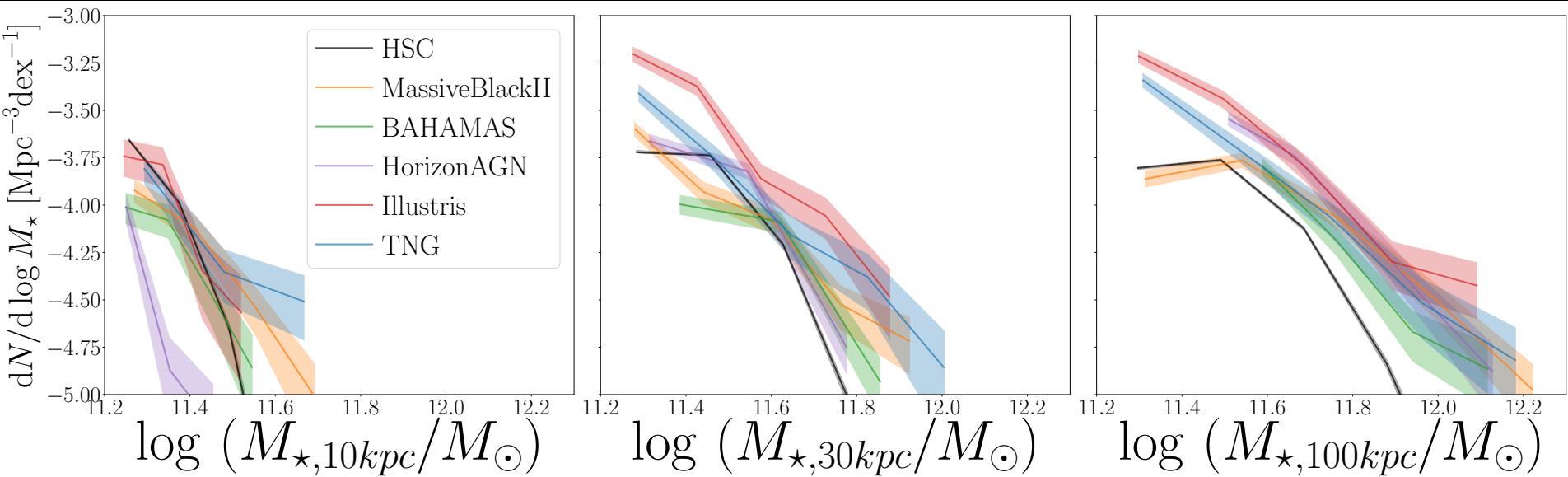
# $M_{\star,100\text{kpc}}$ vs. $M_{\text{halo}}$



# Matched by $M_{halo}$

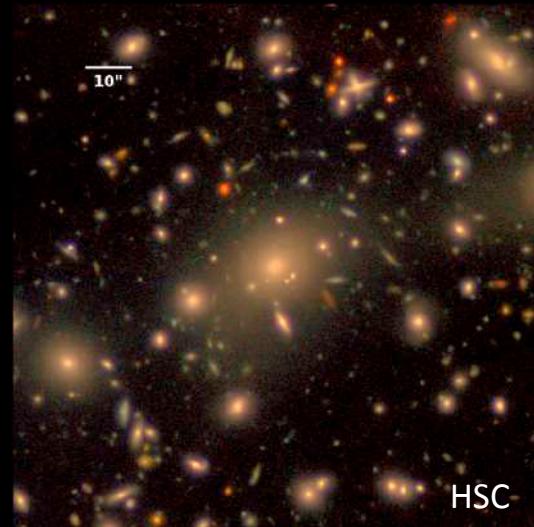
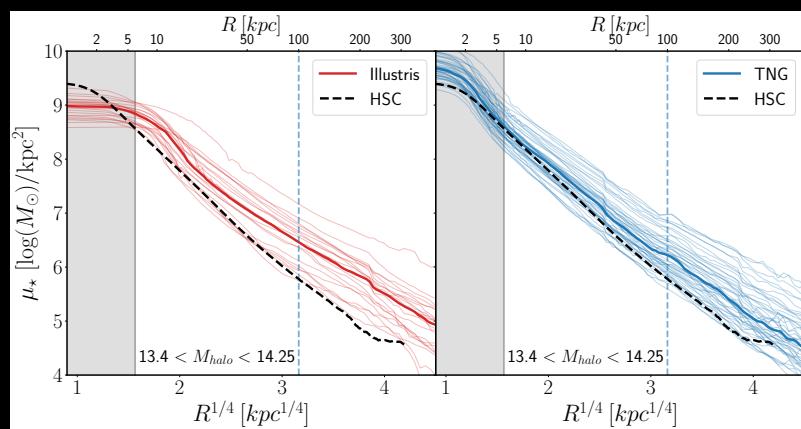


# Stellar Mass Functions



# 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.

