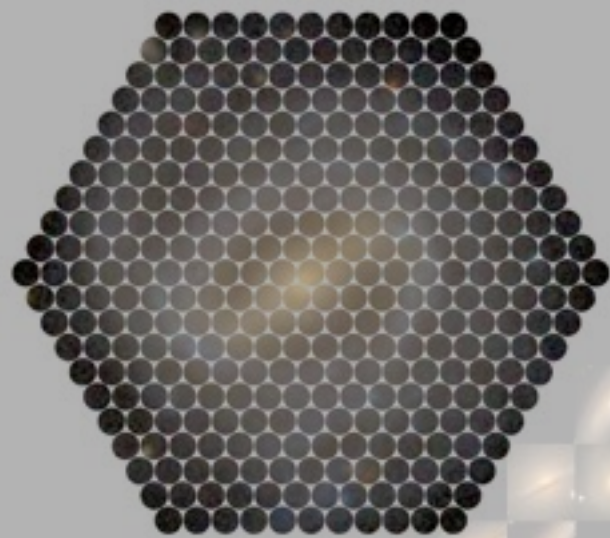




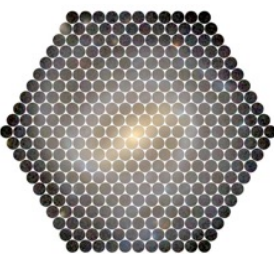
CALIFA Survey



Dynamical decomposition of galaxies across the Hubble sequence

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Ling Zhu (MPIA), Remco van den Bosch (MPIA), Jesus Falcon-Barroso (IAC),
Mariya Lyubenova (Kapteyn Institute), Sharon Meidt (MPIA) &
CALIFA collaboration

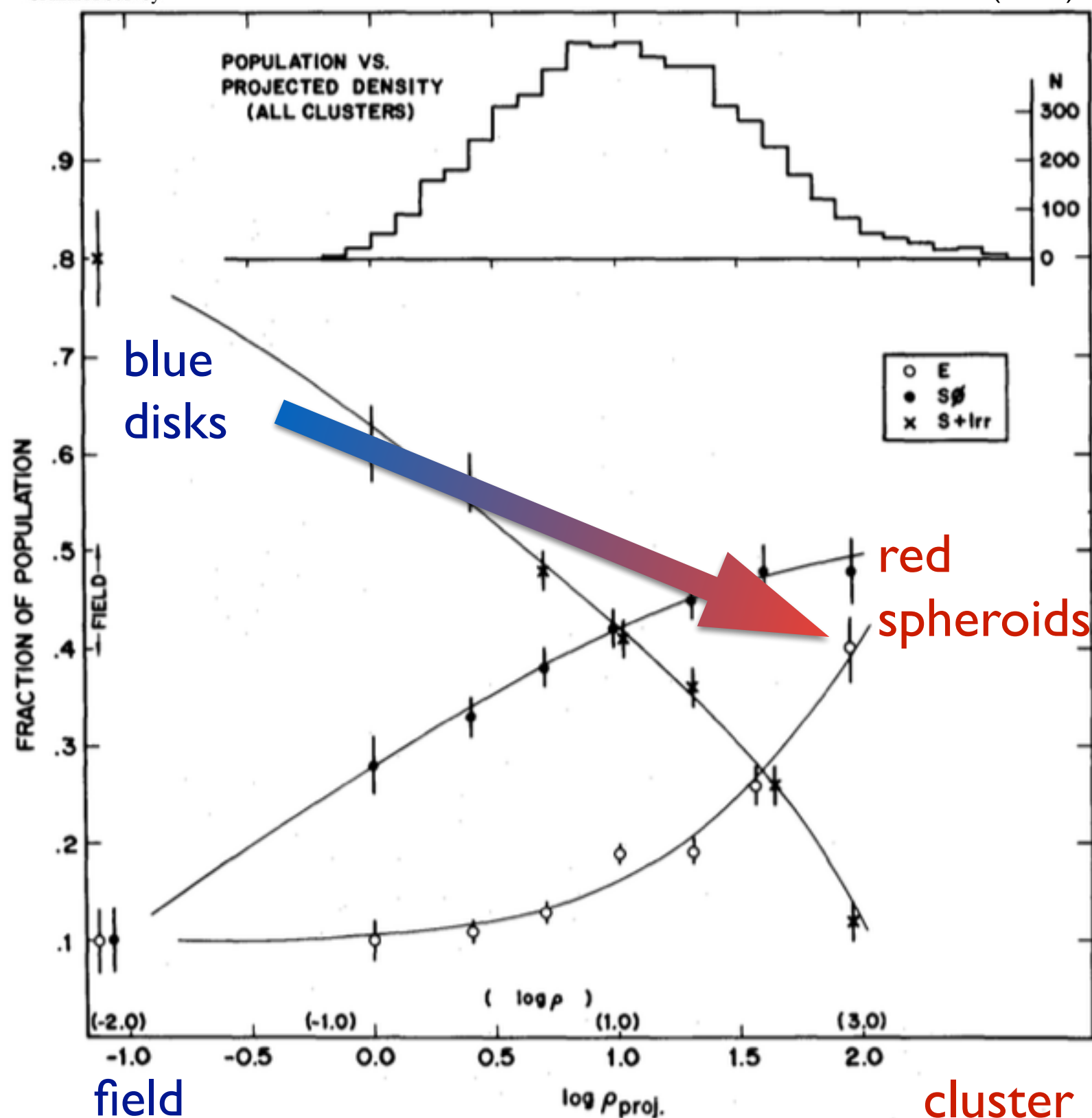


CALIFA Survey

Galaxy transformation mechanisms



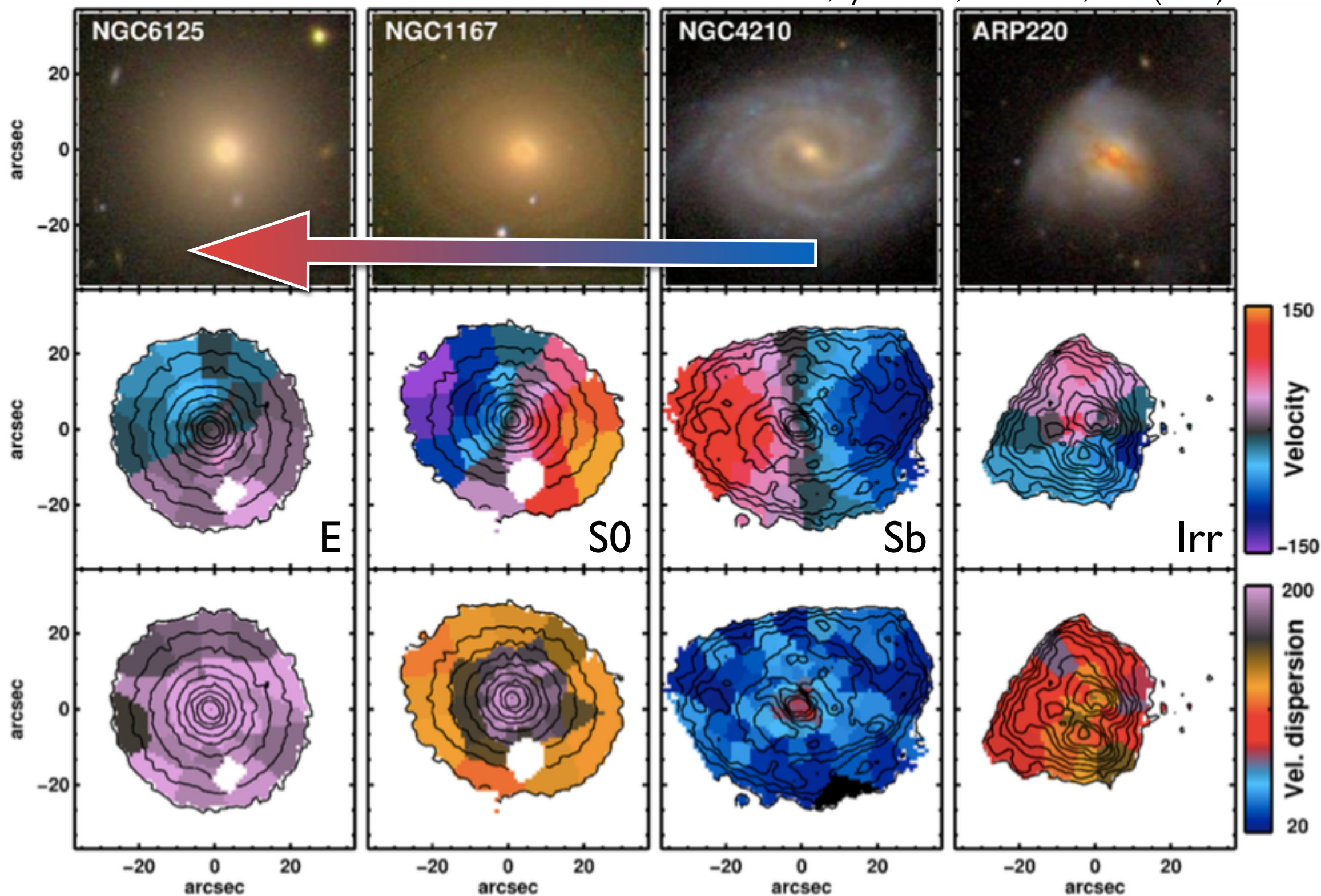
Dressler (1980)

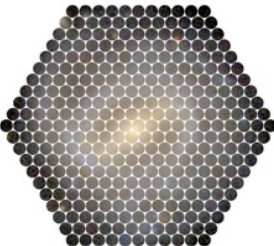


- Internal:
 - fading?
 - feedback?
- Environment:
 - ram pressure stripping?
 - tidal interactions?
- Mergers:
 - major/minor?
 - wet/dry?
- Different effects, but...
 - beyond photometry
 - robust de-composition

CALIFA stellar kinematics

Falcón-Barroso, Lyubenova, van de Ven, et al. (2016)



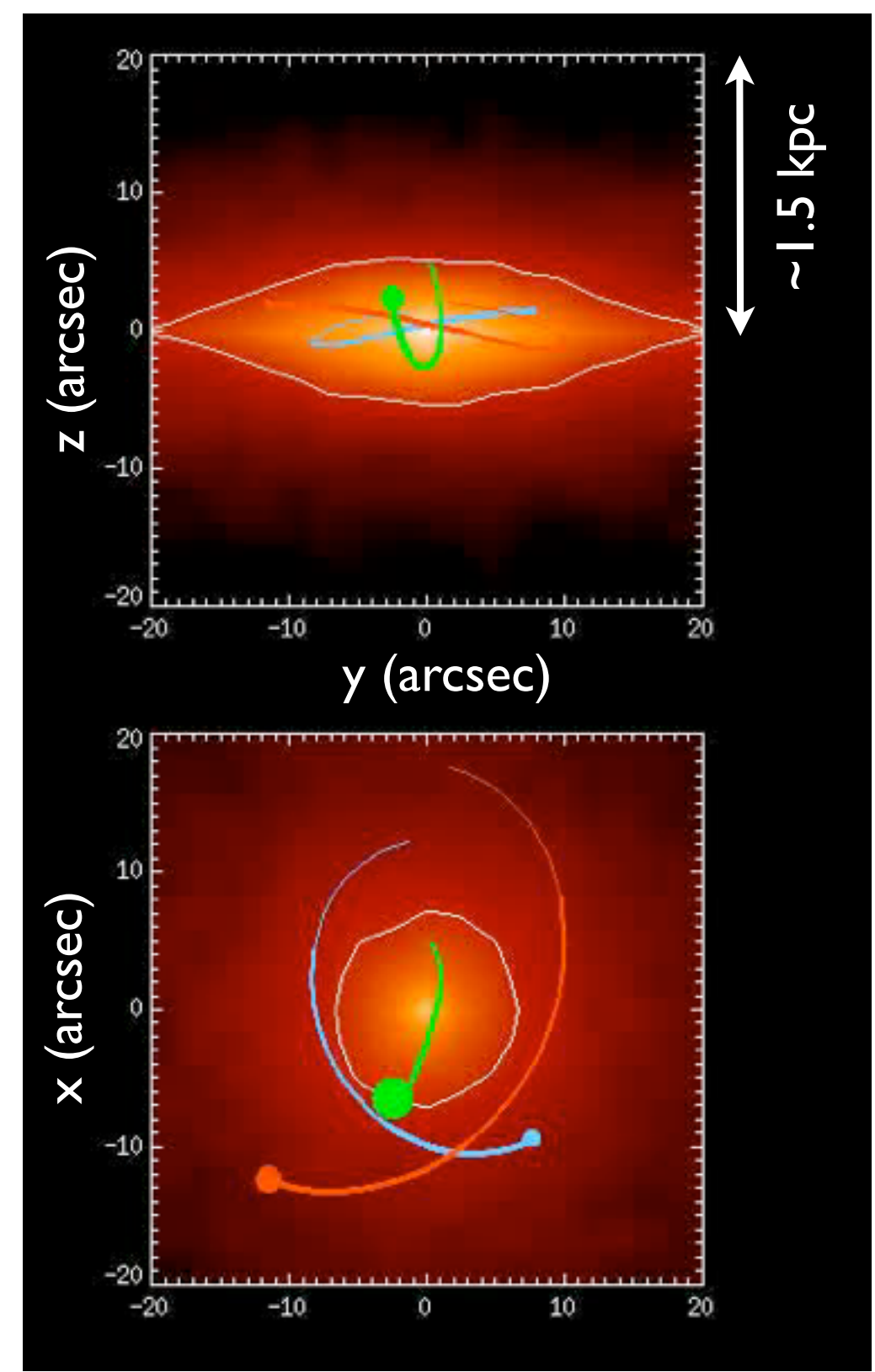
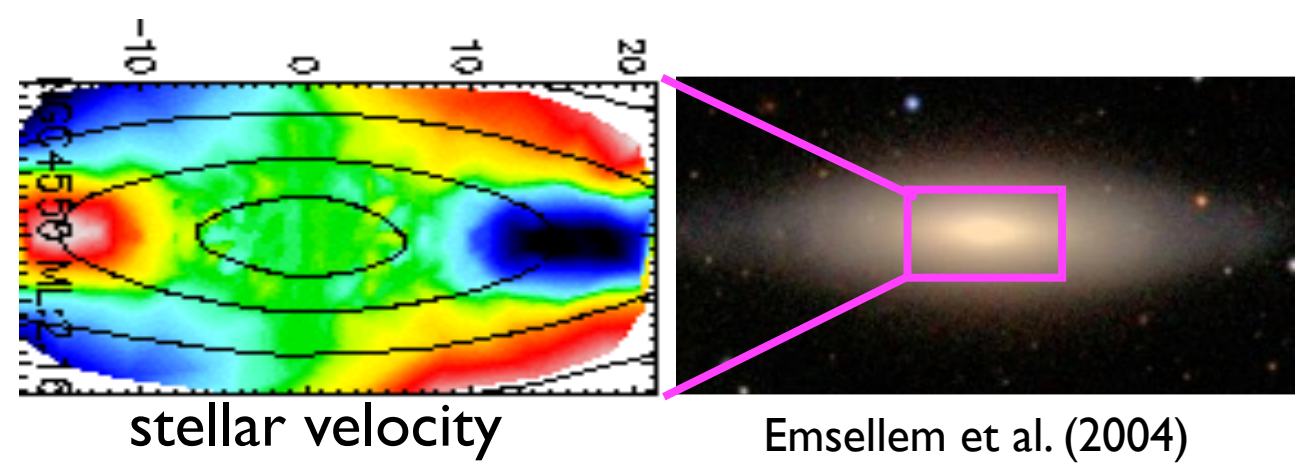
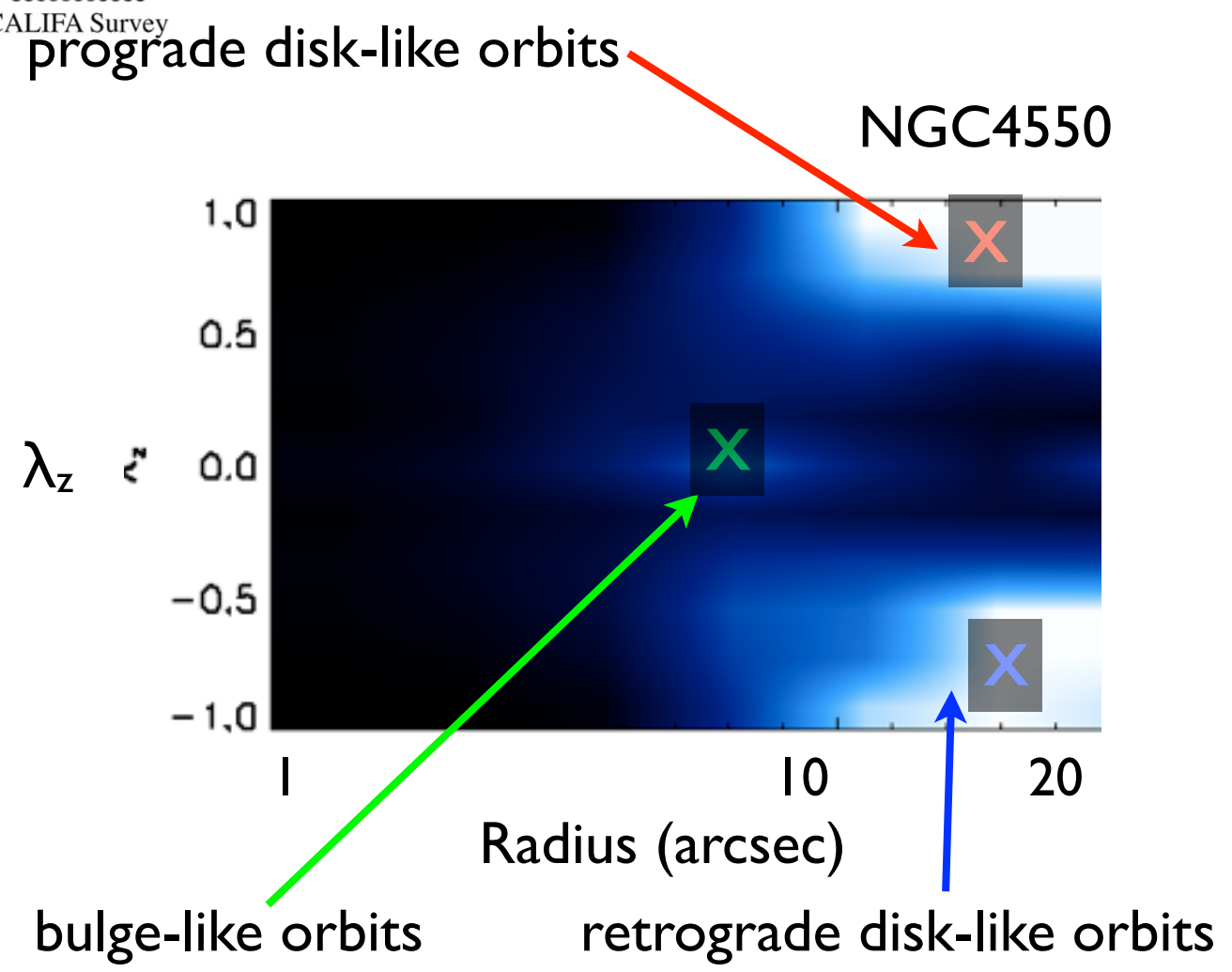


CALIFA Survey

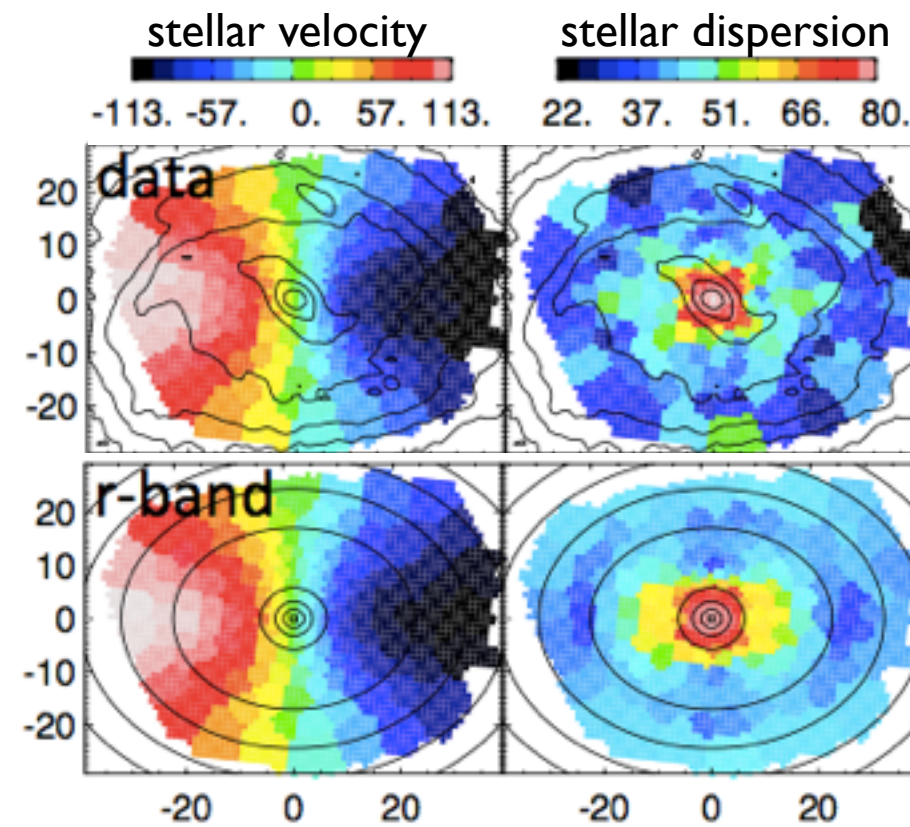
Schwarzschild orbit-based models



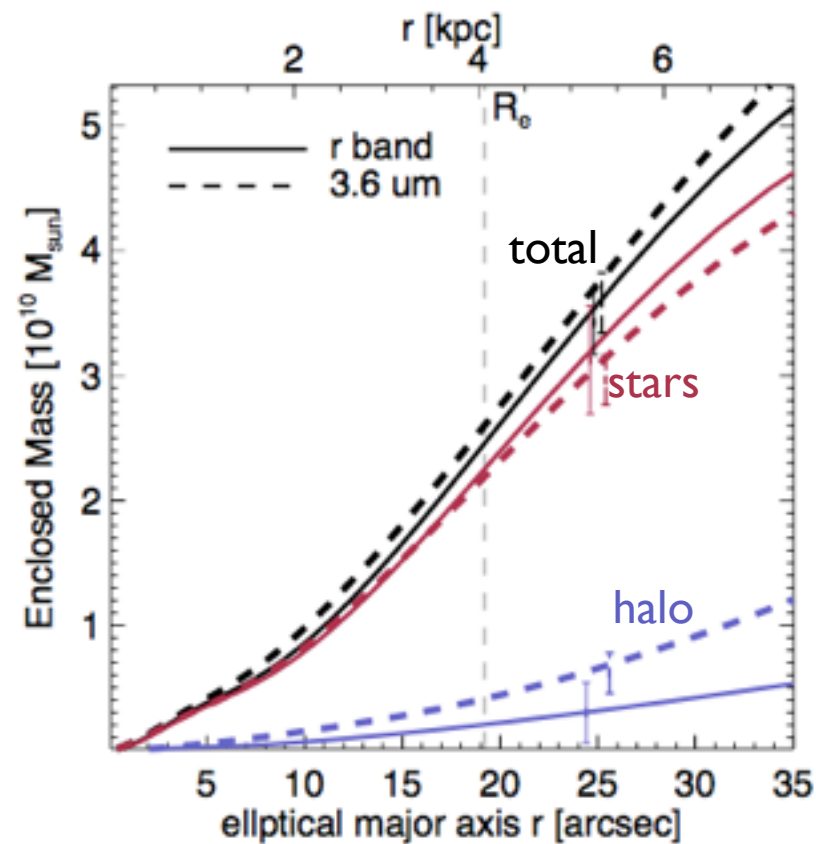
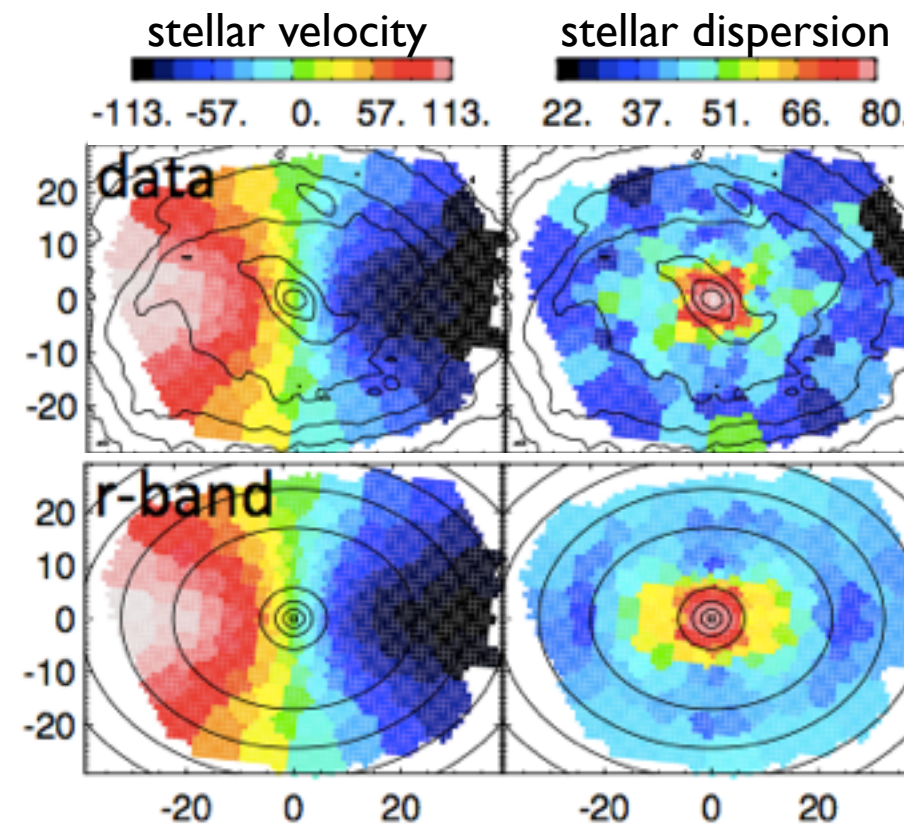
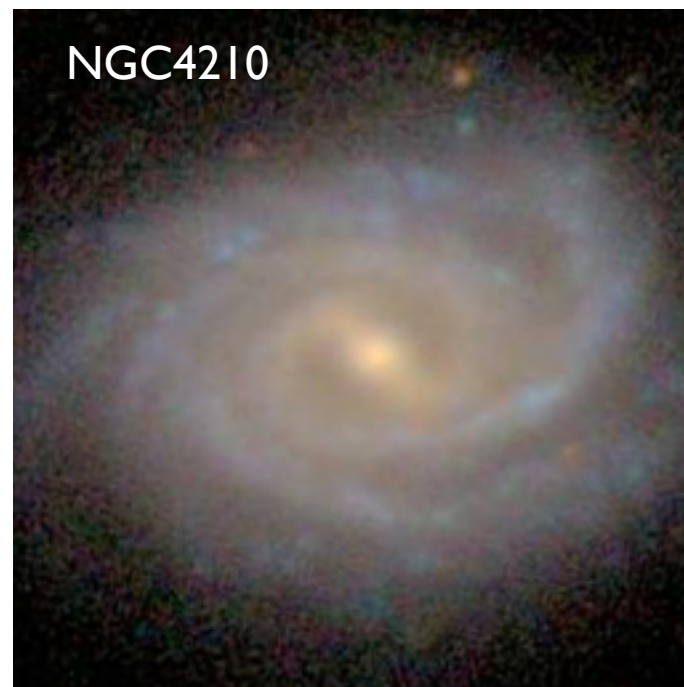
Credit: R. van den Bosch



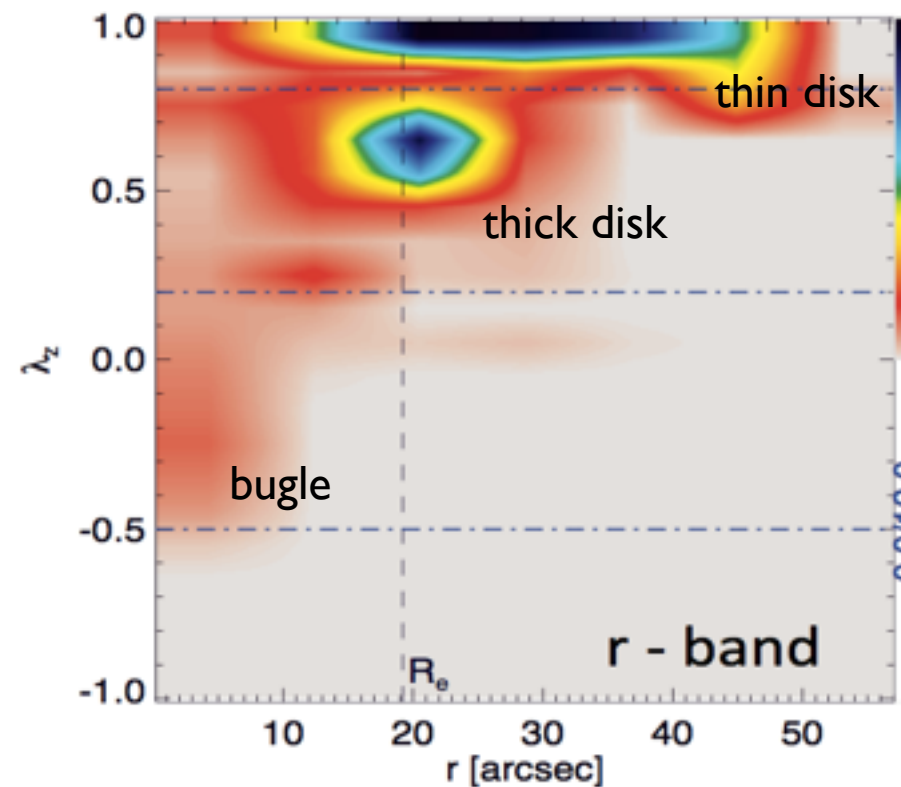
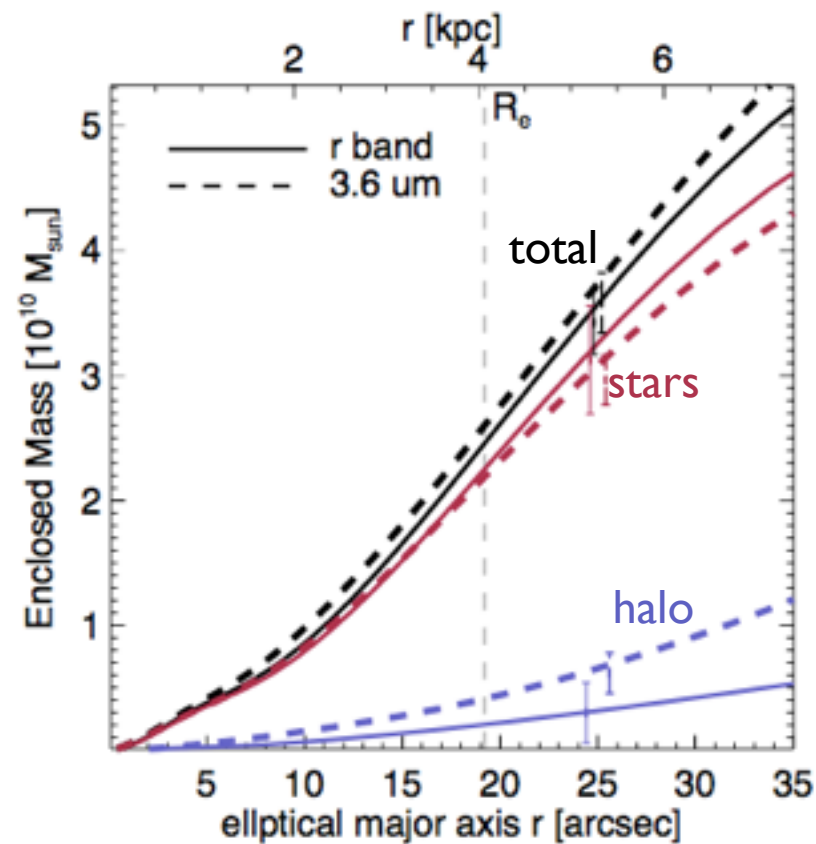
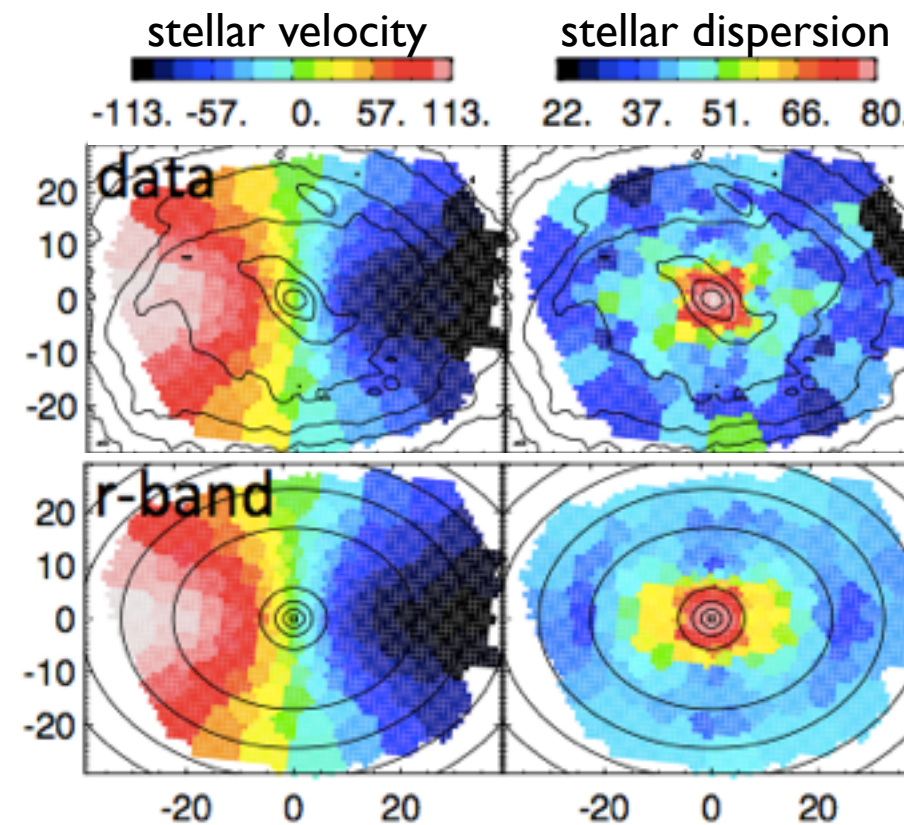
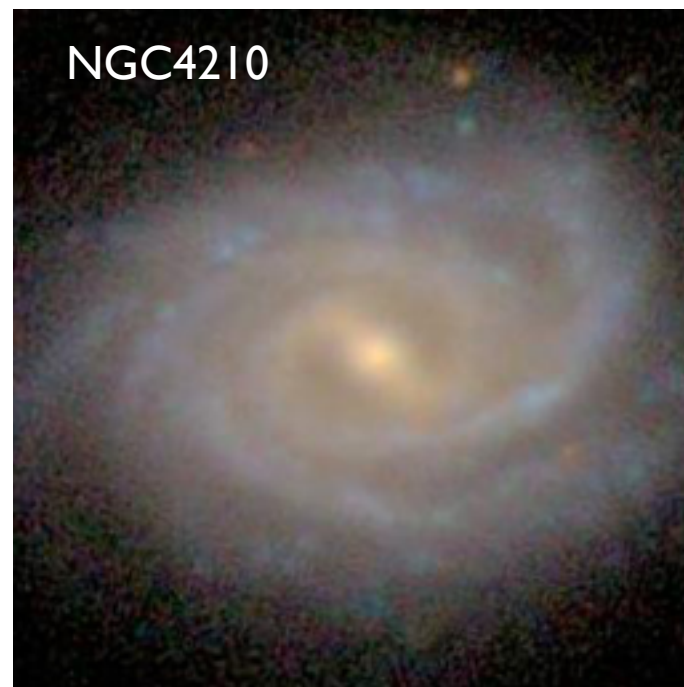
CALIFA spiral galaxies



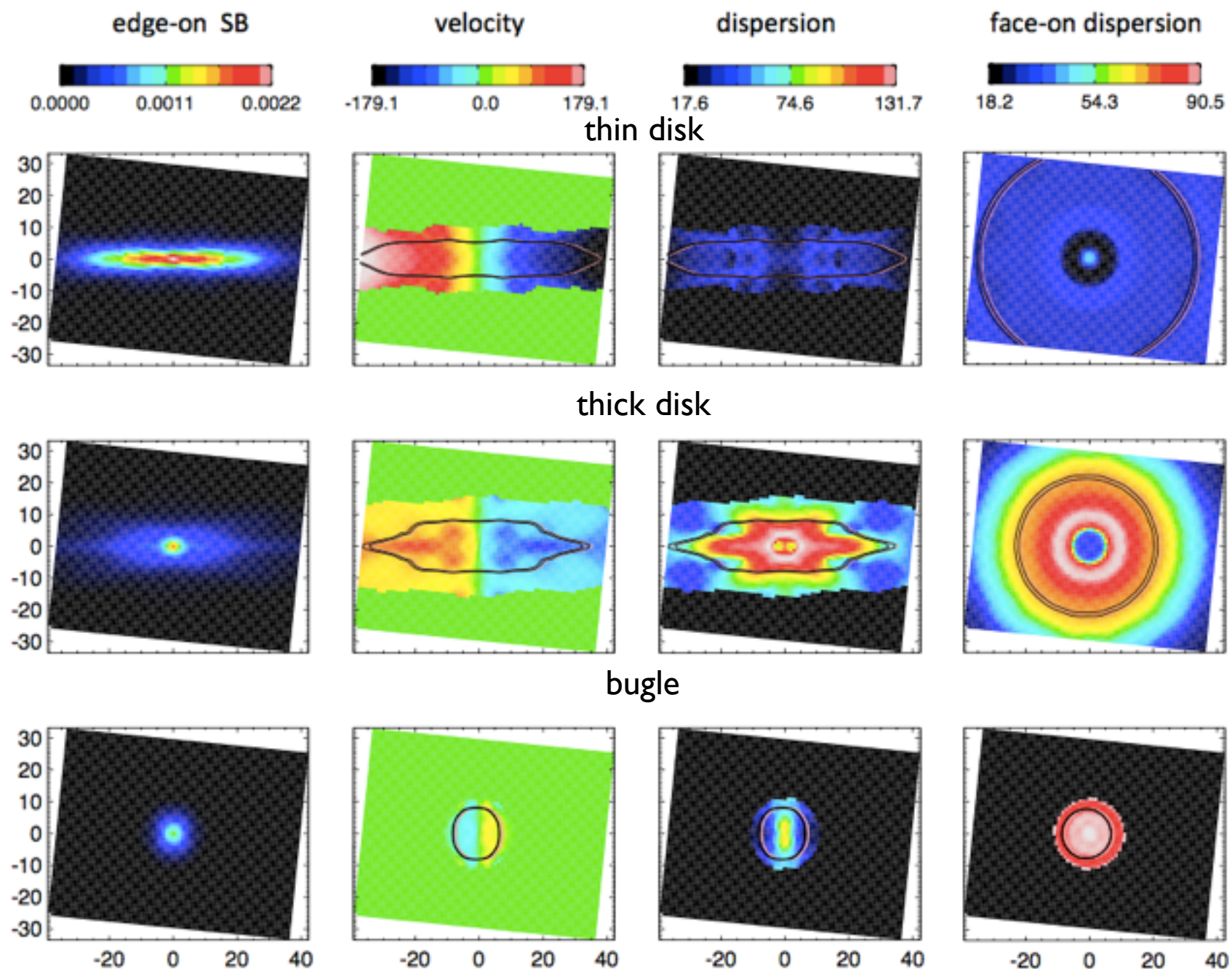
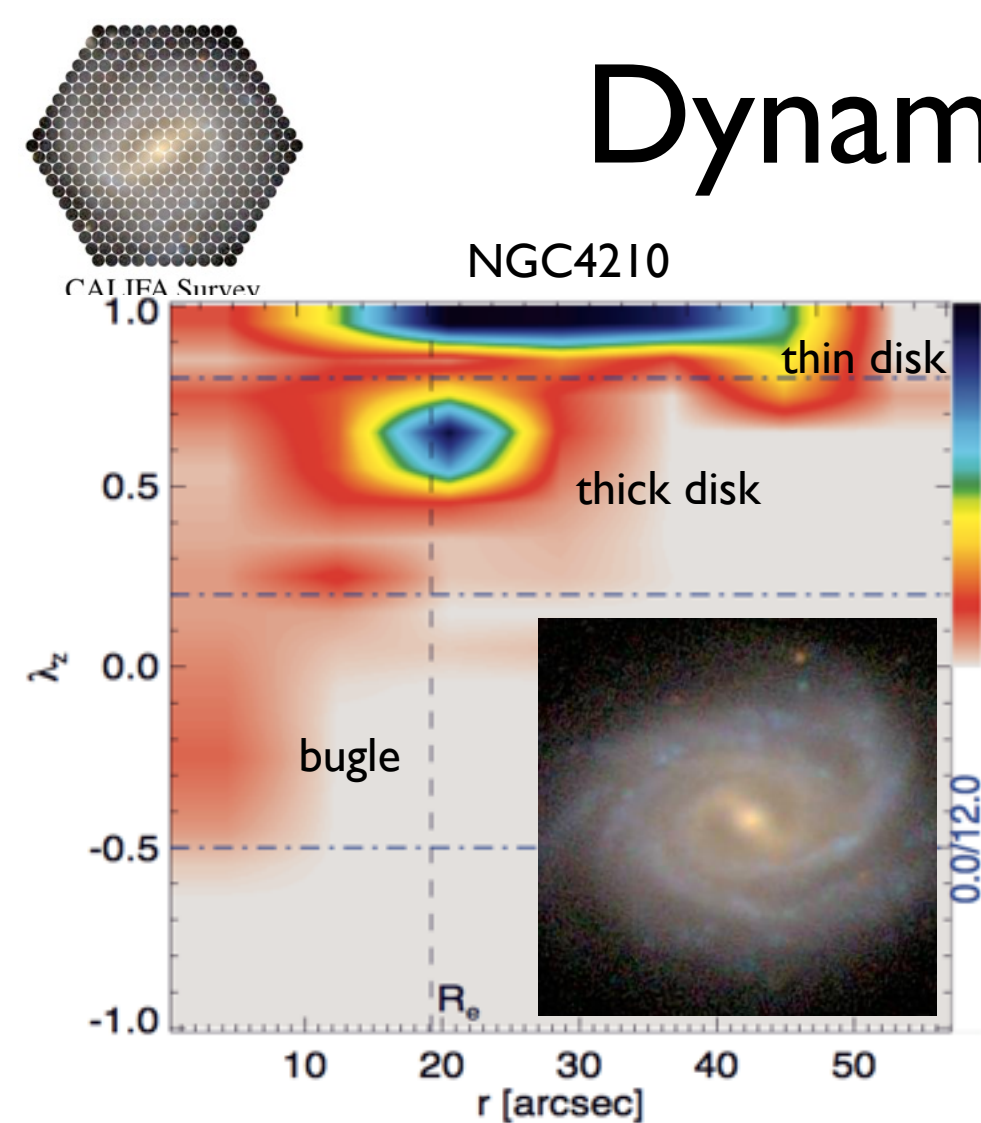
CALIFA spiral galaxies



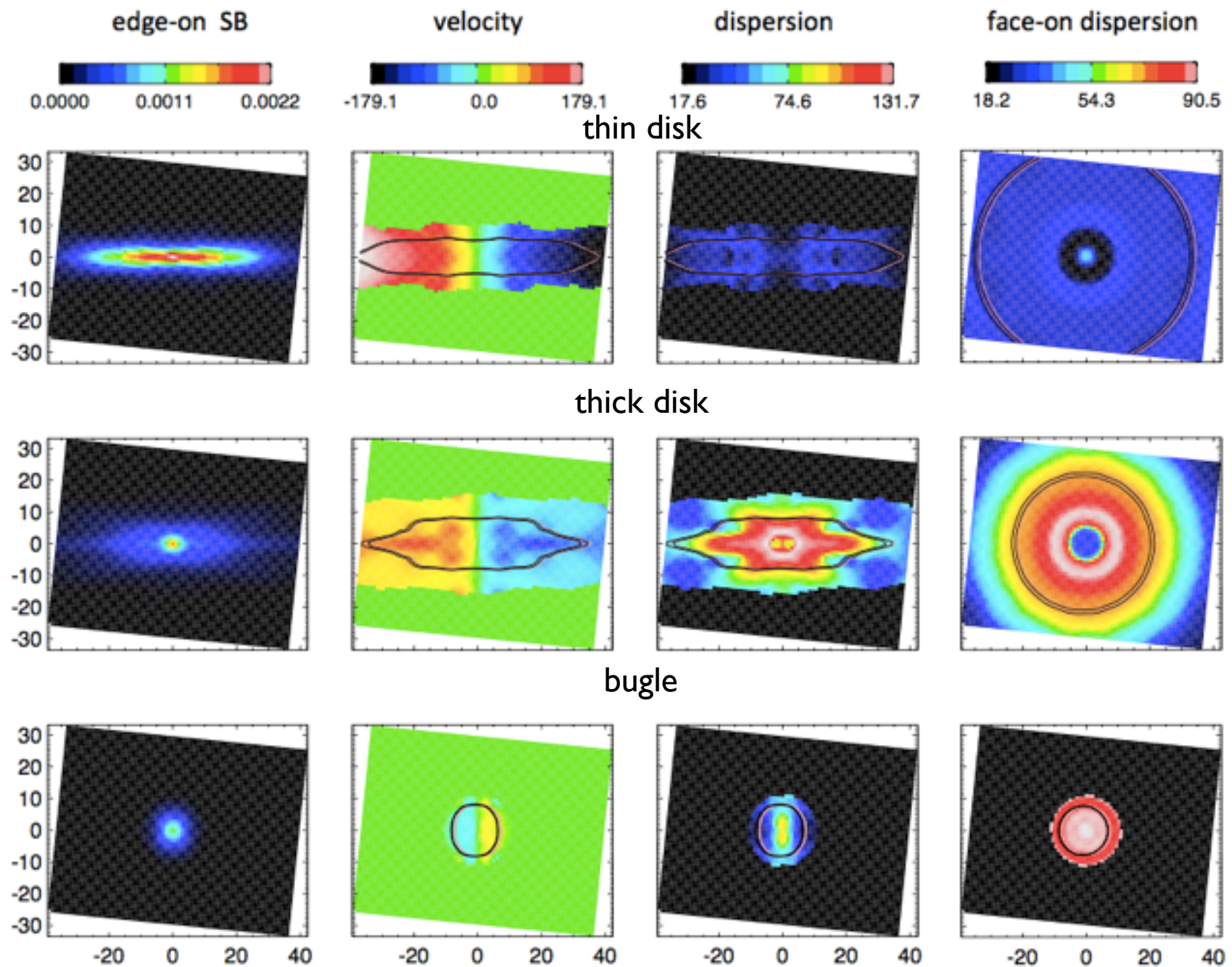
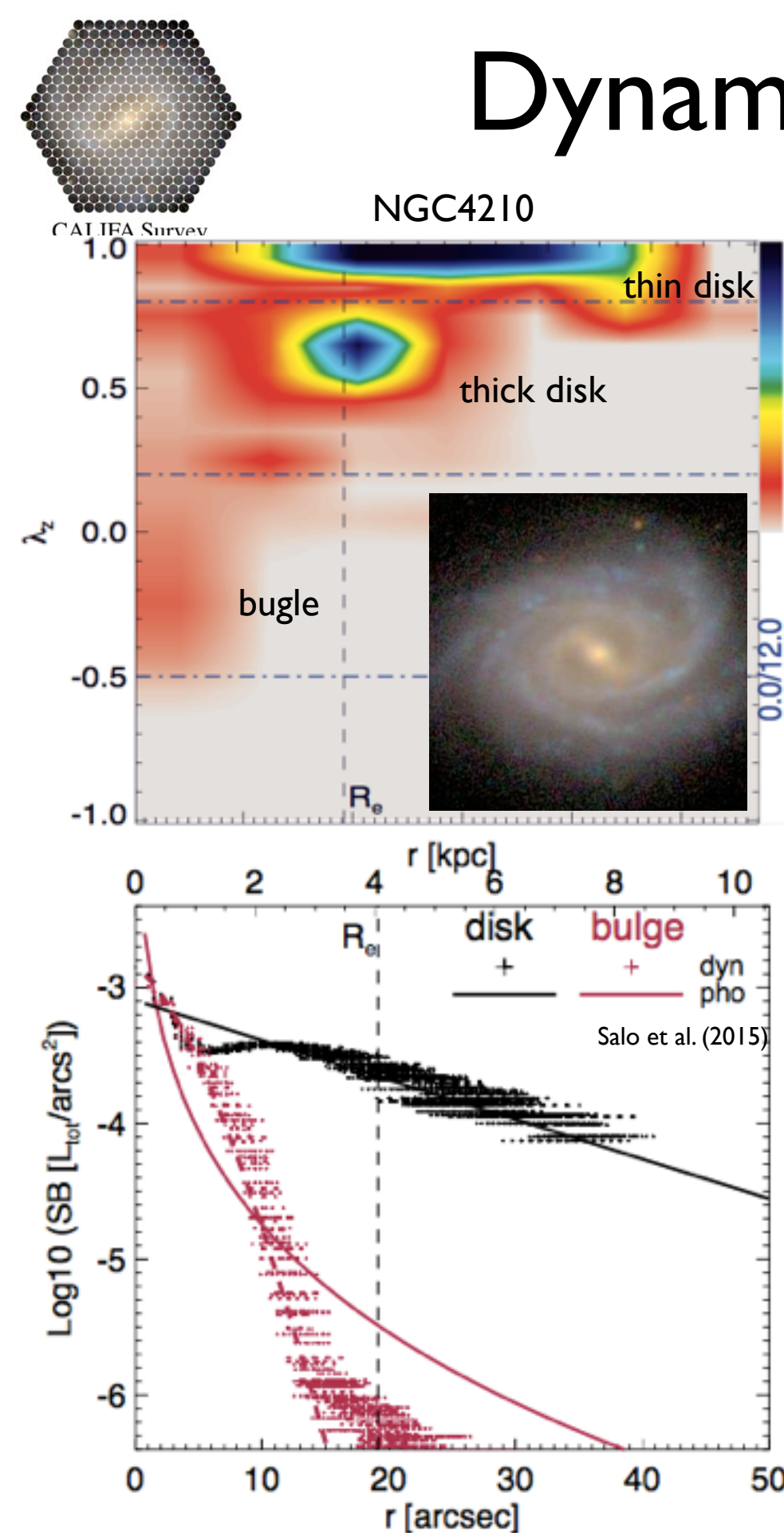
CALIFA spiral galaxies

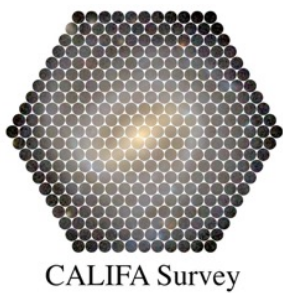


Dynamical decompositions



Dynamical decompositions



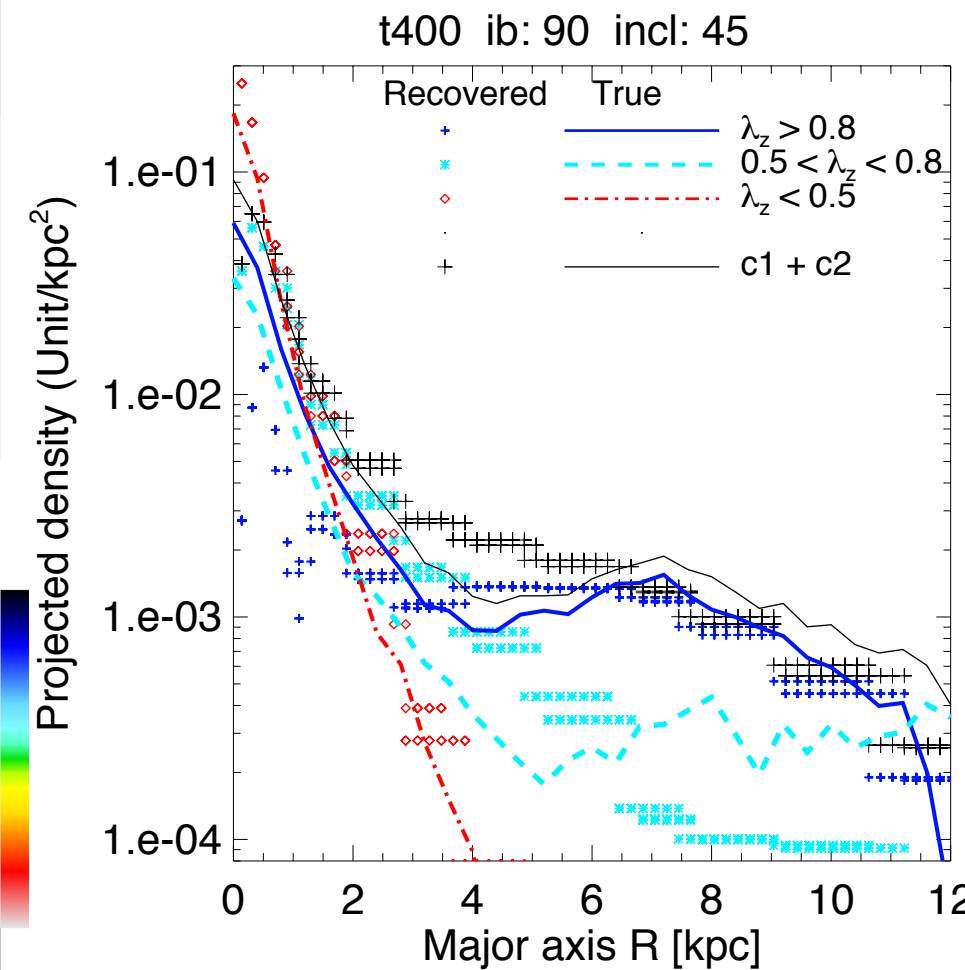
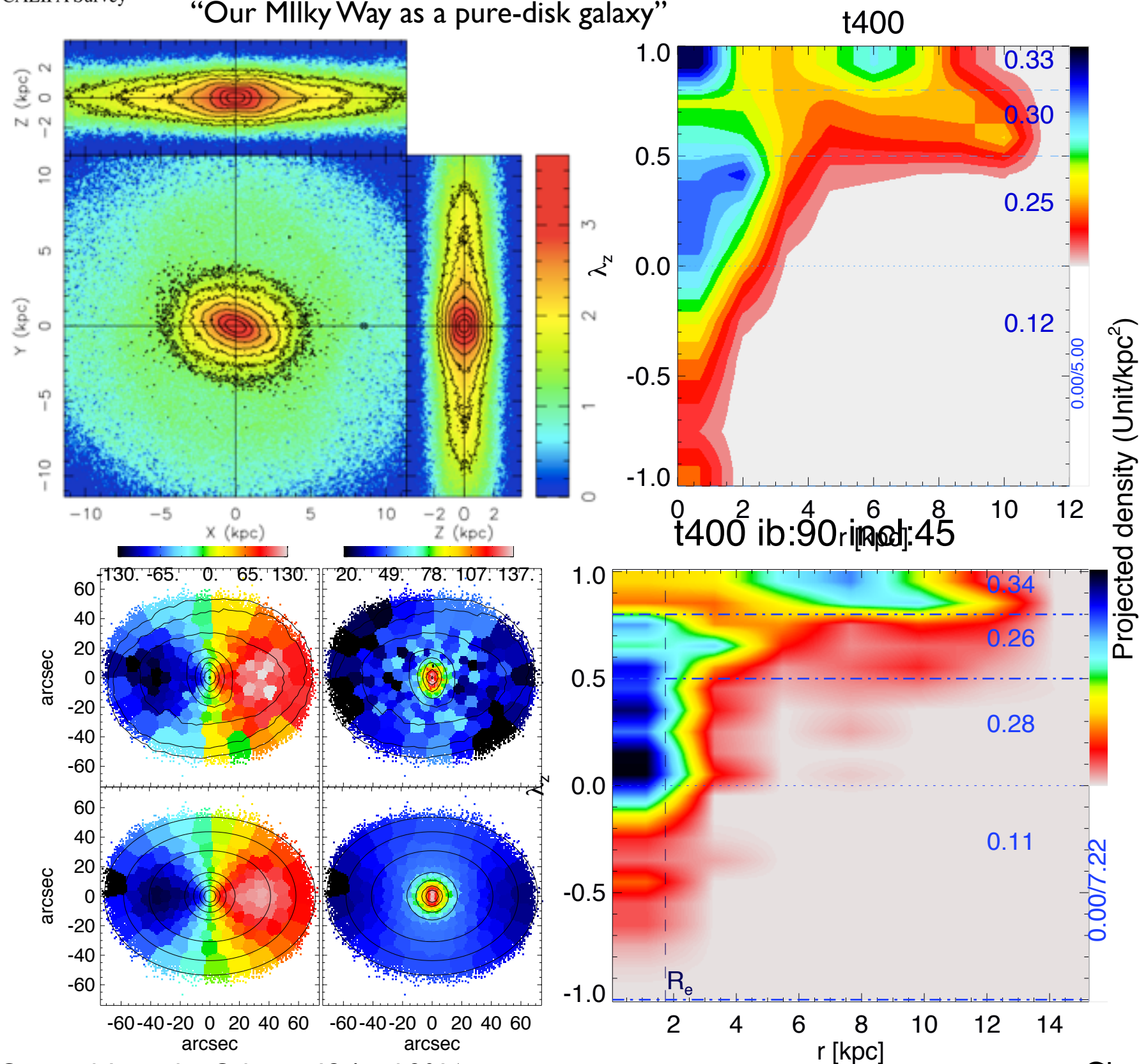


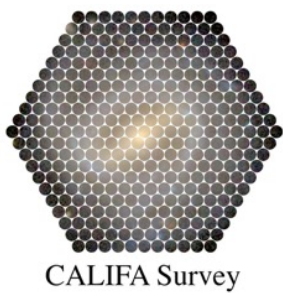
Simulated spiral galaxy



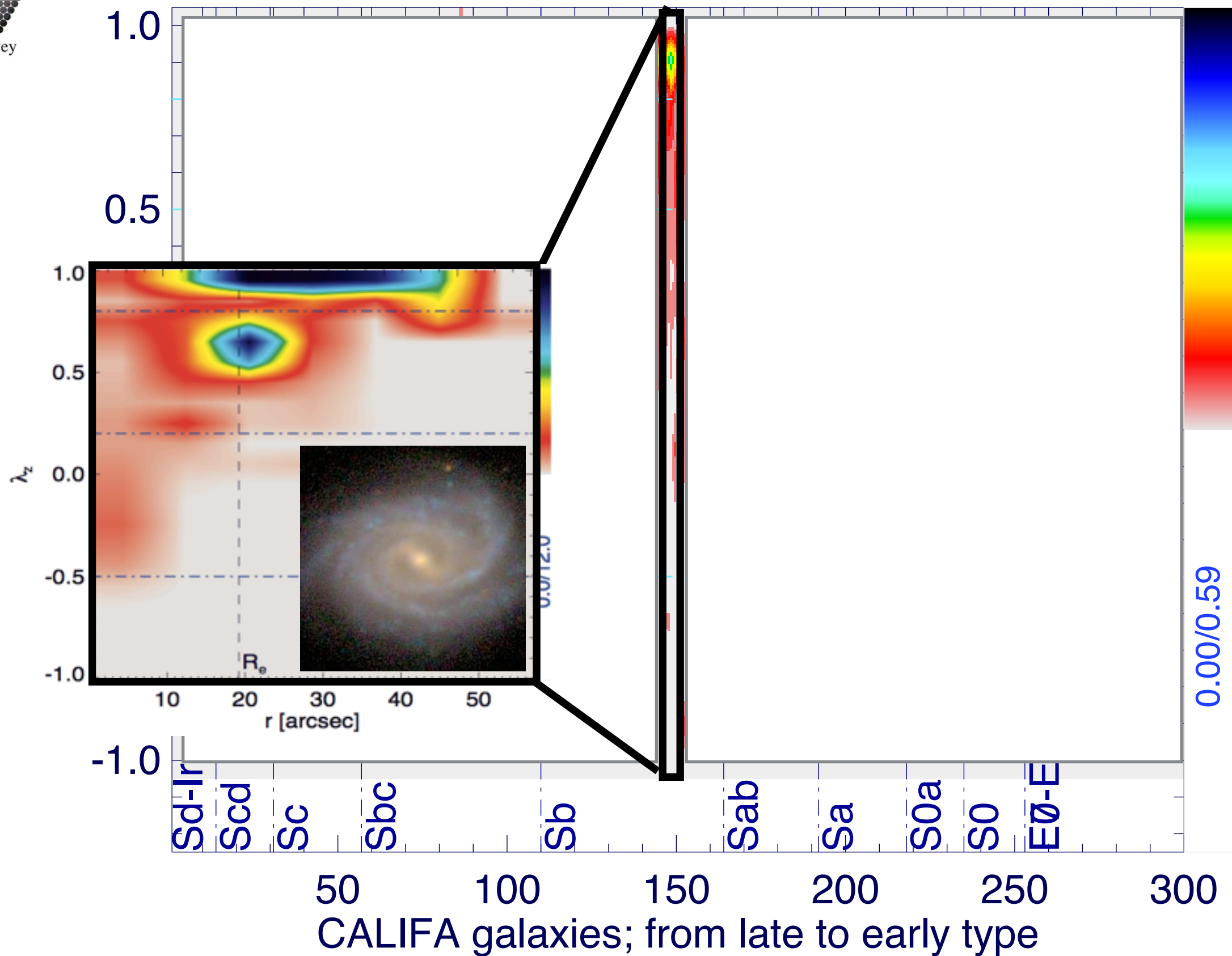
Shen et al. (2010)

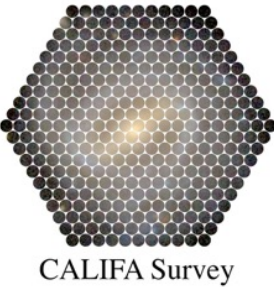
“Our Milky Way as a pure-disk galaxy”



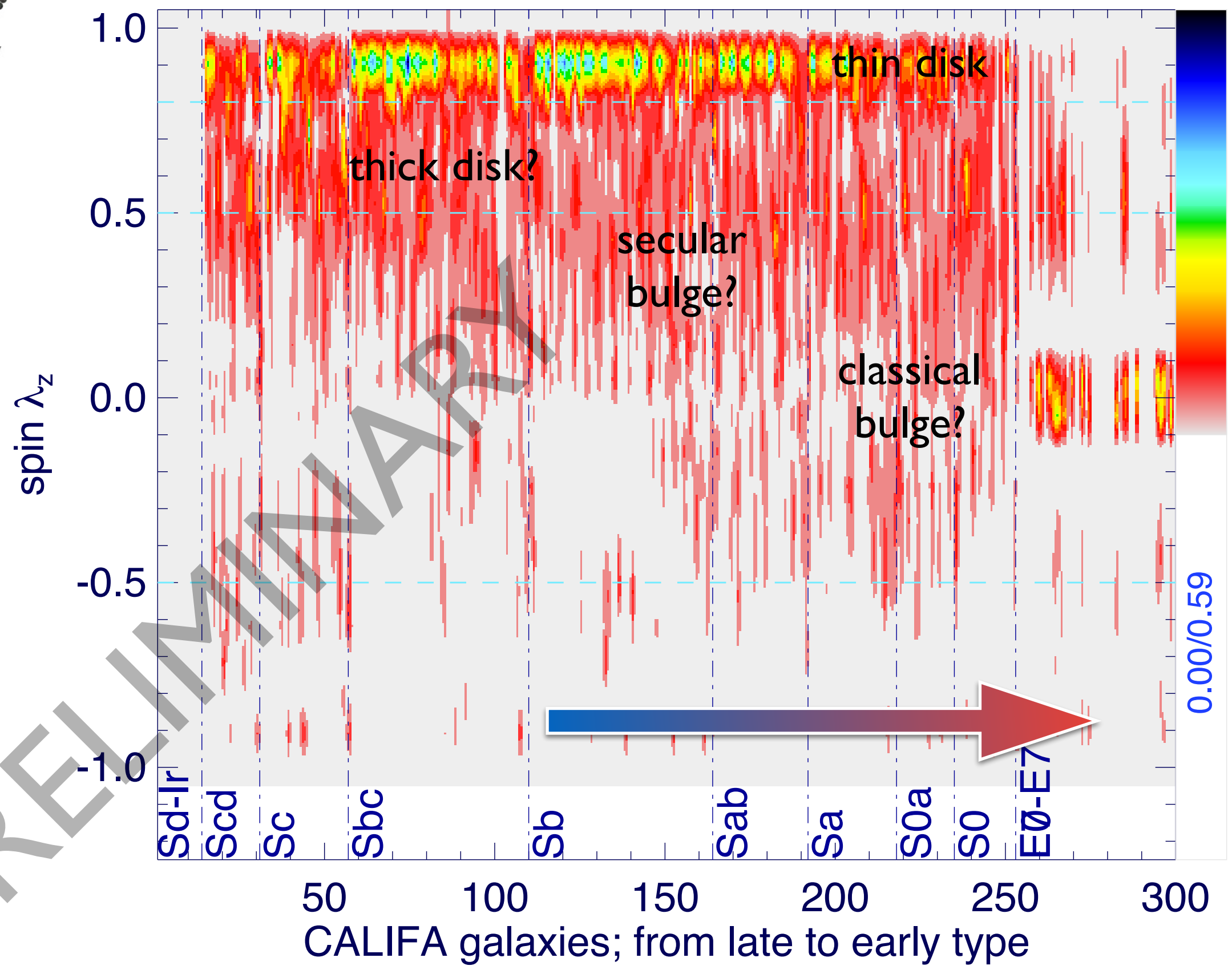


Across Hubble Type

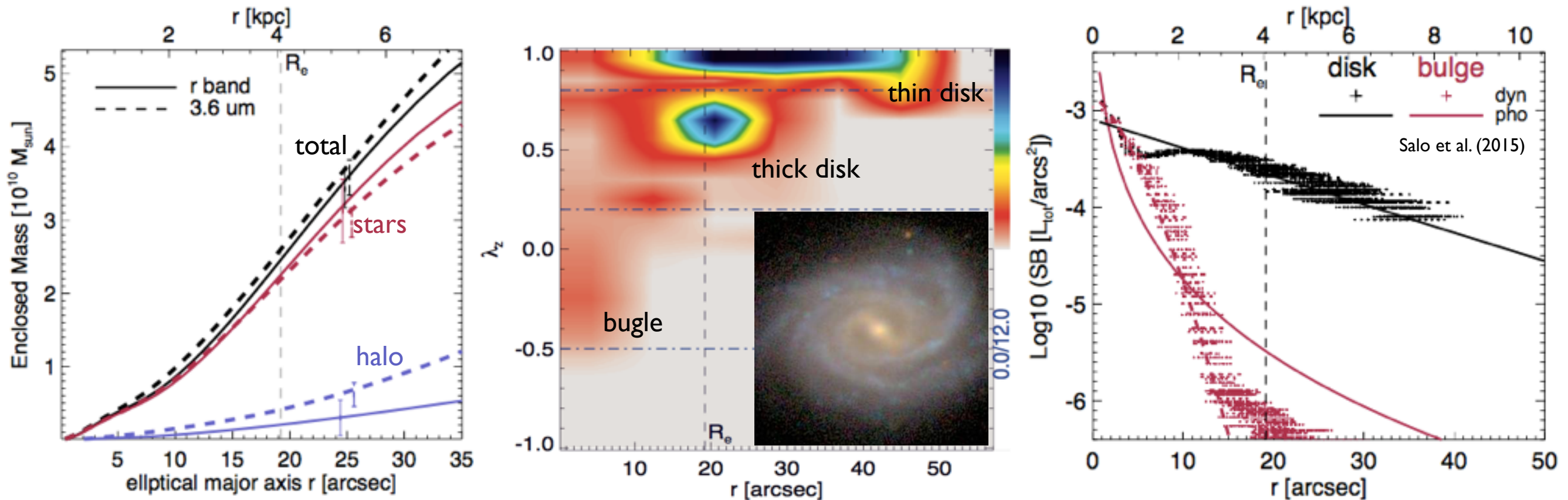




Disk to spheroid transformation?



Conclusions



Schwarzschild models of CALIFA galaxies yield robust:

- Intrinsic luminous and dark matter distribution
 - Robust dynamical decomposition
 - For a statistically well-defined sample of 300 galaxies of all types
- ... constrain galaxy transformation mechanisms