Probing the Environmental Effects on Galaxies in Virgo Cluster

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Chung et al. (2009)

VLA Imaging of Virgo in Atomic gas (VIVA)

Sample : 21 VIVA galaxies

1. First Group: Ongoing/Active Ram Pressure Effect

Truncated HI disk
Undisturbed stellar disk
One-side HI tail

2. Second Group: Past Ram Pressure Effect

Asymmetric stellar distribution
Extended HI distribution
HI or Stellar bridge

3. Third Group: Gravitational Interaction

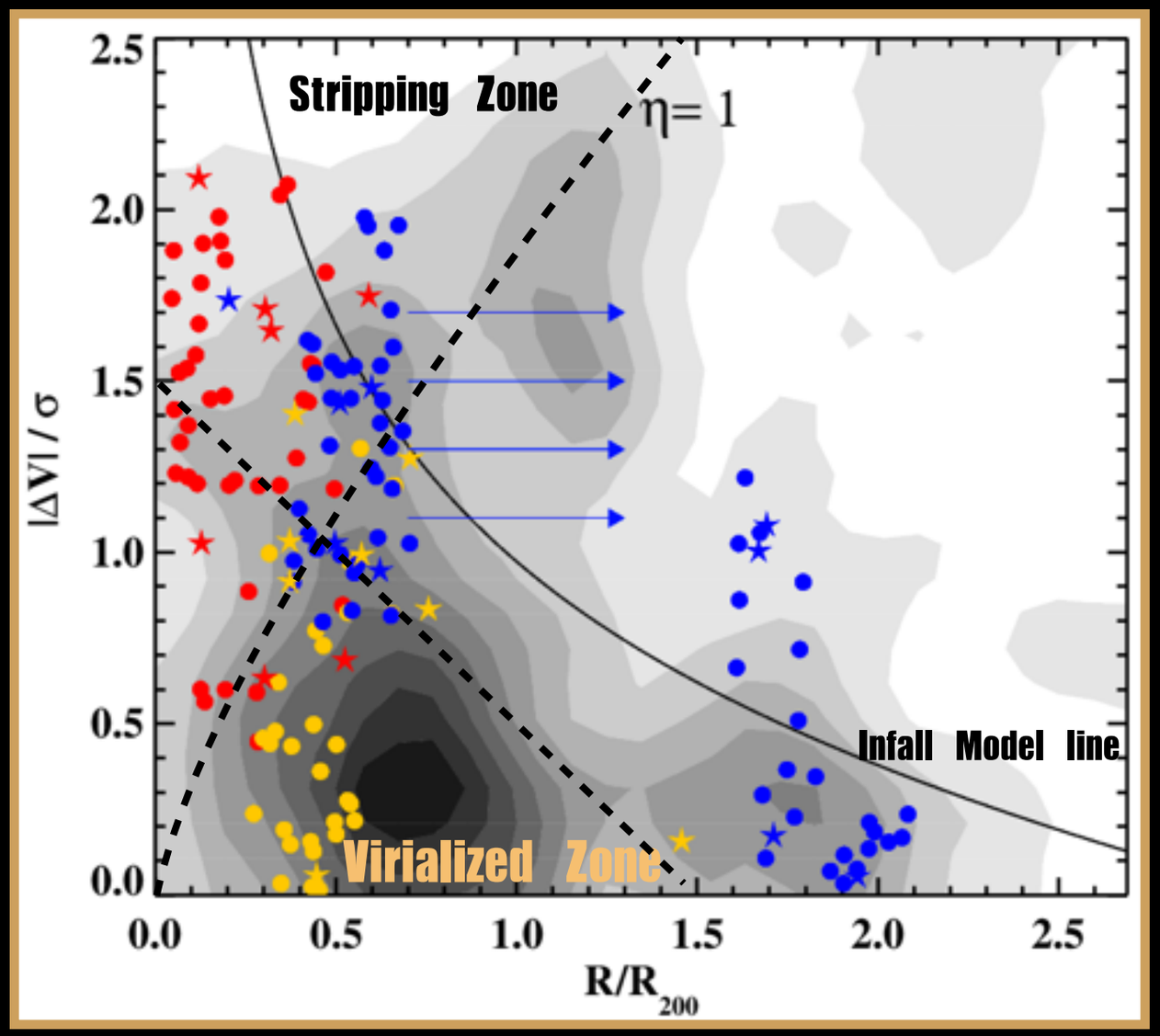
Low HI surface brightness
Concentrated HI Distribution
Symmetric HI Distribution

See also Yoon (2012), Yoon+16, in prep.

Results

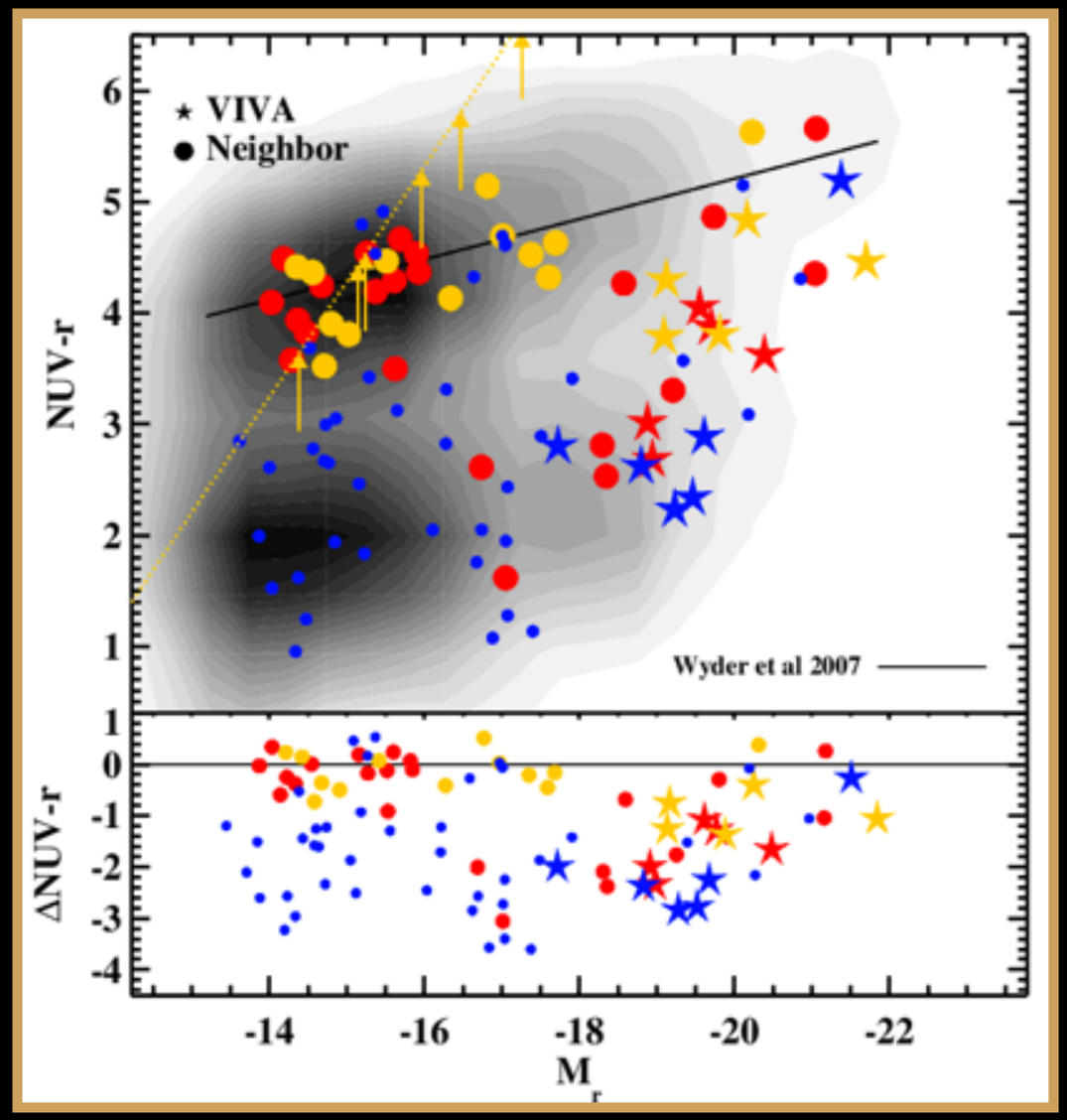
- First group : Ongoing and active ram pressure effect
- Second group : Past ram pressure effect
- Third group : Gravitational effect

Phase space diagram + ram pressure stripping model (J.D. Hernandez-Fernandez+14, Jaffe+15)



Extended Virgo Cluster Catalog (EVCC, Kim+14)

NUV-r color-mgnitude diagram



GALEX UV + SDSS optical data

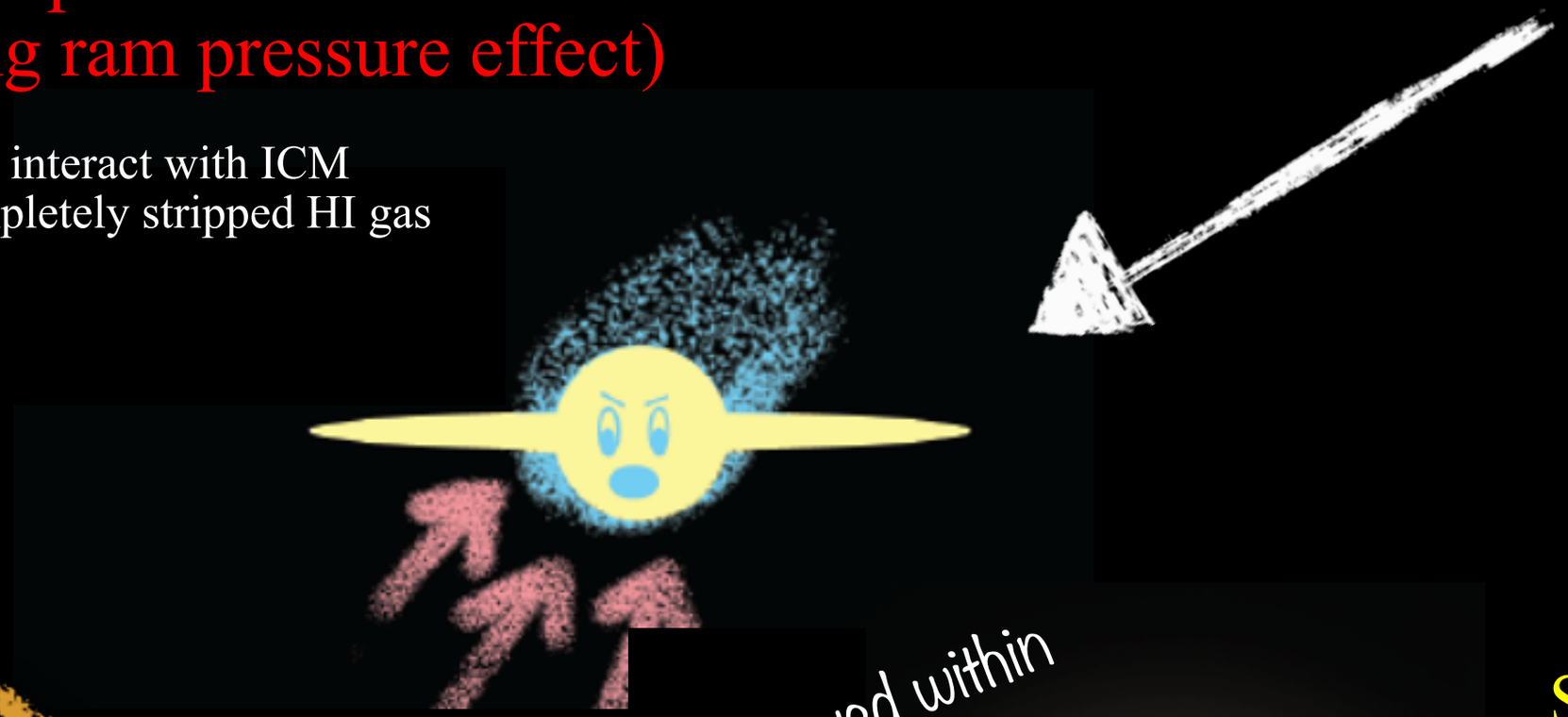
Discussion : Evolutionary Track of Three Groups

Third group
(No ICM interaction)

Infall into Virgo Cluster
Tidally interaction

First group
(Ongoing ram pressure effect)

Begin to interact with ICM
Not completely stripped HI gas



Cluster Center

ISM is completely removed within
1~1.5 Gyr

Second group
(Past ram pressure effect)

Virialized regions
Trucated HI components