

Galaxy Evolution in Groups and Clusters at 'low' Redshift: Theory and Observations, Ringberg 11-15 December 2017

Monday 11/12: (Chair: Pillepich)

11:30-13:00: Registration, room check-in, and welcome

13:00-14:00: Lunch

14:00-15:00: Introductions: Pillepich and everyone

15:00-16:30: Review on Observations: Peletier & co.

16:30-17:00: coffee

17:00-18:30: Review on Models: Nelson & co.

18:30: dinner

19:30: Open Questions: Sales & Lisker

Tuesday 12/12:

Chair: Lagos

09:00-10:00: Review on SF/feedback, AGN, ICM: Gnedin, McNamara, Forman & Pillepich

10:00-10:30: Gas-related Environmental Effects, part I/III

Anderson: Multiphase gas in a sightline towards a filament in M87

Roediger: ICM flow patterns associated with ram pressure stripping - or lessons from non-quasi-steady-state stripping

10:30-11:00: coffee

Chair: Poggianti

11:00-12:30: Gas-related Environmental Effects, part I/III (cont)

Vollmer: Galaxy evolution in the Virgo cluster

Boselli: VESTIGE: A Virgo Environmental Survey Tracing Ionised Gas Emission

Toloba(remotely): Ultra-diffuse galaxies: nature vs nurture

Cortese: Cold gas stripping in galaxy groups

Yagi: Several intergalactic ionized gas in clusters of galaxies

Zinger: Quenching in cluster outskirts

Discussion

12:30-13:30: lunch

Chair: Bahe'

13:30-15:15: Gravity-related Environmental Effects

van den Bosch: The Tidal Evolution of Satellite Galaxies

Smith: ~Half the Cluster Population were Pre-processed - Insights from High-Res Cosmo Sims.

Wittmann: Were the most compact and most diffuse stellar systems in galaxy clusters both formed by tidal stripping?

Joshi: Mass loss and preprocessing of group galaxies

Serra: Tidal effects in groups and the Fornax cluster

Discussion

15:15-15:45: coffee

Chair: Emsellem

15:45-17:30: Splinter meetings

17:30 - 18:30: Dwarfs in Clusters

Peletier: The Fornax Deep Survey

Lisker: How to discriminate between cluster galaxy properties imprinted at birth and resulting from environmental transformation

Engler: Intrinsic Scatter of the Mass-Metallicity Relation in Illustris Dwarfs

Michea: Searching for substructure in Fornax Deep Survey (FDS) dwarf galaxies

Sanchez-Janssen: Diffuse dwarfs, dense clusters, and what it all means

18:30: dinner

19:30: Dwarfs in clusters: Discussion

Wednesday 13/12

Chair: Sanchez-Janssen

09:00-10:30: Gas-related Environmental Effects, part II/III

Poggianti: Gas stripping phenomena with MUSE integral-field spectroscopy

Fossati: A spatially resolved view of gas stripping processes in nearby clusters

Jachym: Molecular gas in ram pressure stripped tails

Vulcani: Hunting down those responsible for the observed spatial distribution of the ionised gas in galaxies at $z=0-0.5$

Yun: Jellyfish galaxies in the IllustrisTNG simulations

Tonnesen: A Note About Comparing Ram Pressure Simulations and Observations

Discussion

10:30-11:00: coffee

11:00-12:30: Splinter meetings

12:30-13:30: lunch

Chair: Kenney

13:30-15:15: Assembly I: ICL and globular clusters

Peng: Globular clusters in low-mass galaxies as probes of quenching

Sales: Modeling globular clusters on cosmological simulations of Virgo-like objects

Gnedin: On the origin of the correlation between halo mass and its globular cluster system mass

Leaman: The Survival of a Relic Galaxy in the Centre of Perseus as traced by its Globular Clusters

Discussion

15:15-15:45: coffee

15:45-18:30: Splinter meetings

18:30: Dinner

19:30: Discussion

Thursday 14/12

Chair: Postman

09:00-10:30: Galaxy transformations and quenching, now and then

Lin: Cluster galaxy population evolution from the Subaru Hyper Suprime-Cam survey: brightest cluster galaxies, stellar mass distribution, and active galaxies

Cooper: Project Purple Rain: When Doves Cry, Satellites Quench

Wilson: Galaxy Quenching in Clusters and Growth of BCGs

Donnari: The effects of environment on the star formation activity of galaxies with the IllustrisTNG simulation

Rodriguez-Gomez: Galaxy mergers in different environments

Smith: A Phase-space View of Simulated and Observed Environmental Effects

Discussion

10:30-11:00: coffee

Chair: Nelson

10:30-11:30: Galaxy transformations and quenching, now and then (cont)

Yi: First results from Yonsei Zoom In Cluster Simulations

Bidaran: Dwarf progenitors - what we can learn from circular velocity profiles?

Lagos: The connection between mass, environment and slow rotation in simulated galaxies

Jones: The Infall of Elliptical Galaxies into the Virgo and Fornax Clusters

Discussion

11:30-12:30: Small meetings/individual work

12:30-13:30: lunch

Chair: Peng

13:30-15:15: Assembly II: BCGs and ICL

Postman: BCGs and Their Relation to the Cluster Environment

Rejkuba: Observations of extended low surface brightness halos around massive galaxies in nearby universe

Pillepich: The stellar mass content of groups and clusters with the TNG simulations

Emsellem: Is prolateness the (dominant) rule for BCGs?

Discussion

15:15-15:45: coffee

15:45-18:30: Splinter meetings

18:30: dinner

19:30: Open questions

Friday 15/12

Chair: Anderson

09:30-12:30: Gas-related Environmental Effects, part III/III

Forman: Supermassive Black Holes at Work: "Fossil Records" of Outbursts from Supermassive Black Holes and the Effects of Outbursts on the Evolution of Gas Rich Galaxies, Groups, and Galaxy Clusters

McNamara: AGN Feedback Stimulated by Uplift in Galaxies

Bahe: Quenching, metallicities, and stellar fractions: the EAGLE view

Henriques: The link between AGN and environmental quenching

10:30-11:00: coffee

Zinger: Thermodynamics of Quenching and Quenched Galaxies in IllustrisTNG

Kenney: HI Distributions of Virgo Cluster Spiral Galaxies and Evolution Driven by Ram Pressure Stripping

Discussion

12:30: lunch

13:30-14:00: final discussion/conclusive remarks (SOC and others?)

14:00: bus for Munich Hbf and Airport

Splinter Proposals:

1. Preparing simulations to match the capabilities of telescopes in the 2020-2040 era.
2. The faint-end of the LF: how to constrain stellar populations, dynamics, masses.
3. How to connect star cluster populations to early SFHs?
4. Early environmental influence
5. Nucleation of galaxies
6. Low surface brightness features I
7. Insights on environmental effects from internal dynamics of galaxies (e.g. IFU studies, etc)
8. Constraints on cosmological models from clusters
9. The connection between clusters and the large-scale structure
10. Importance of pre- and post-processing for the cluster population
11. Overall cluster morphology, irregularity and dynamics.
12. Exciting new, and upcoming instruments for cluster studies
13. The origin of low-mass galaxies in clusters
14. The role of extended gas halos for galaxy evolution in different environments
15. A session where observers can be taught (or better introduced to) how to use IllustrisTNG data would also be useful.
16. Evolution of stripped multi-phase ISM in the intra-cluster space.
17. Strangulation of galaxies.
18. Place of analytic calculations in the era of sophisticated numerical simulations.
19. Future missions (particularly X-ray missions - eROSITA, Athena, Lynx)
20. How to define environment/protoclusters in simulations and observations
21. The role of the turbulent multi-phase ISM for the quenching of star formation
22. Best choice for the definition of quenching timescales.