

A visualization of the cosmic web, showing a complex network of blue filaments and nodes with numerous bright orange and yellow galaxies scattered throughout. The background is dark, making the glowing structures stand out.

Galaxy Evolution in Groups and Clusters at 'low' Redshift:

Theory and Observations

Schloss Ringberg, 11-15, December 2017





Elad Zinger, Postdoc

MPI fur Astronomy (MPIA)

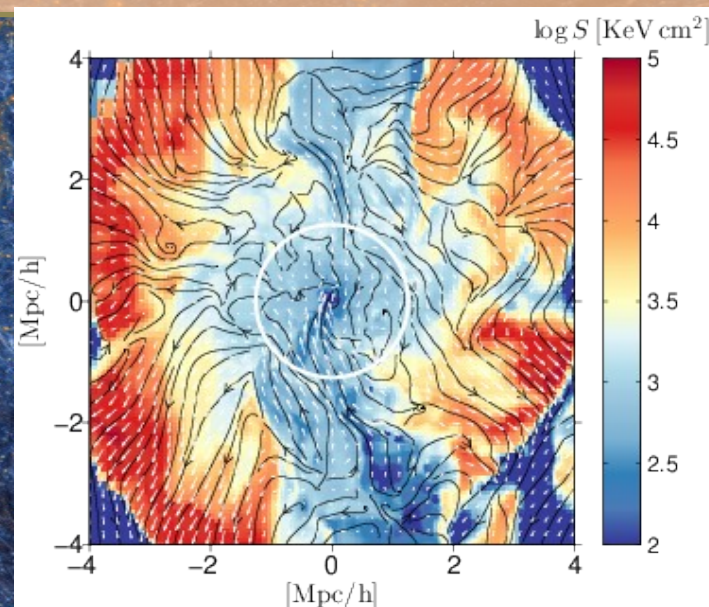
zinger@mpia.de

Talk 1: Quenching in Cluster Outskirts

Talk 2: Thermodynamics of Quenching and Quenched Galaxies
in IllustrisTNG

Scientific Focus and Methods:

- Galaxy evolution in clusters
- Structures and properties of ICM
- IllustrisTNG
- Hydrodynamic Simulations



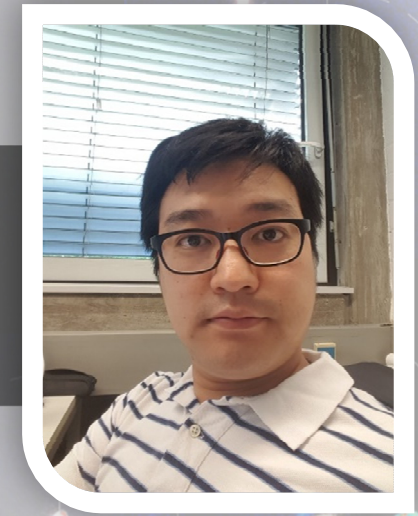
Kiyun Yun

2nd year PhD Student

Max-Planck-Institute for Astronomy (MPIA)

Supervisor : Annalisa Pillepich

yun@mpia.de



Talk Title

Jellyfish galaxies in the IllustrisTNG simulations

Research interest

- The **evolution** of galaxies falling into the massive galaxies
 - Role of **host hot halo environments** in the evolution of satellite galaxies
 - **Jellyfish**-shape galaxies that show extended gas distributions
- Moving mesh hydrodynamic simulation code developing
- Fundamental properties of gravity and dark matter
- Non-inertia effect in galaxy cluster
- Visualization



Sukyoung K. Yi, Professor

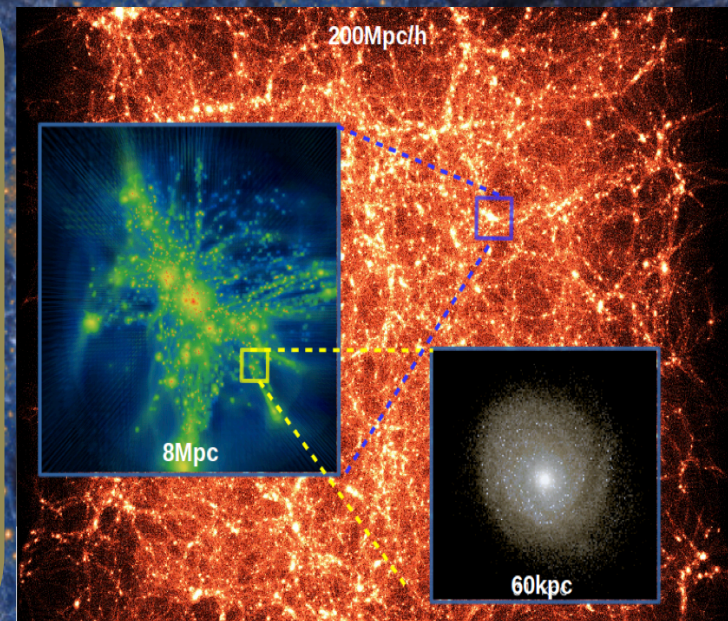
Yonsei University, Seoul, Korea

yi@yonsei.ac.kr

Talk Title: **Yonsei Zoom-In Cluster Simulation**

Scientific Focus and Methods:

- Galaxy spin evolution
- Phase-space diagram application
- Star formation quenching of cluster galaxies



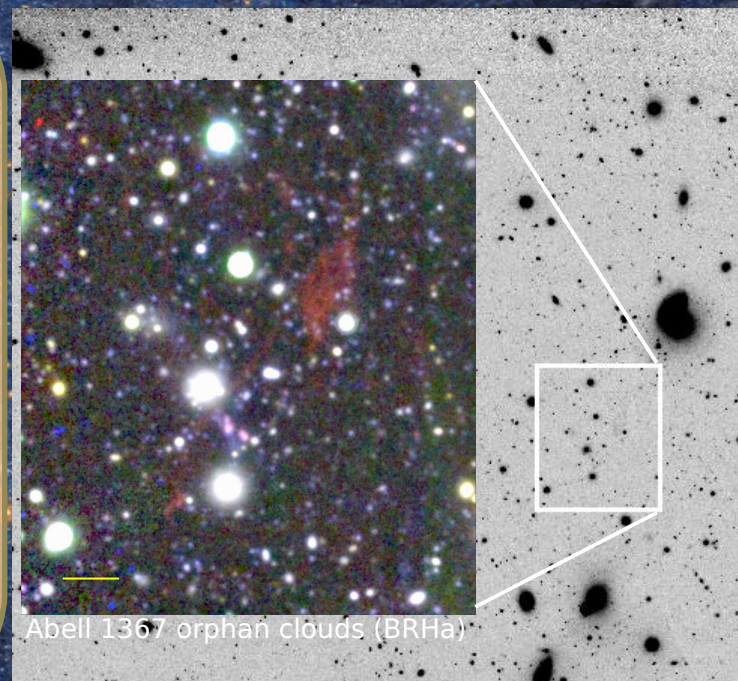


Masafumi Yagi, Assistant Professor
National Astronomical Observatory of Japan
YAGI.Masafumi@nao.ac.jp

Talk Title: **Several intergalactic ionized gas in clusters**

Scientific Focus and Methods:

- Galaxies in nearby clusters, and post-starburst galaxies.
- Optical photometry (esp. H α imaging)
- CCD data reduction and calibration;
(currently absorbed in optical ghosts)

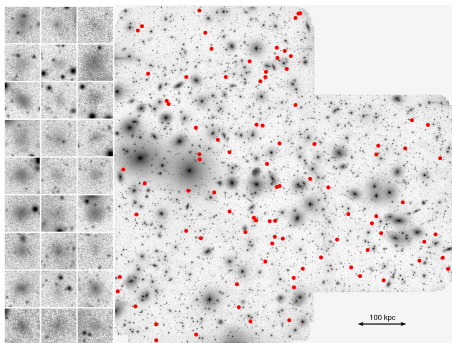




- PhD student (IMPRS-HD)
- Zentrum für Astronomie der Universität Heidelberg (ZAH)

Research interests:

- Low-mass populations in nearby galaxy clusters
 - Including the most compact and most diffuse stellar systems
- ⇒ Signs of environmental influences?



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



Gillian Wilson, Professor

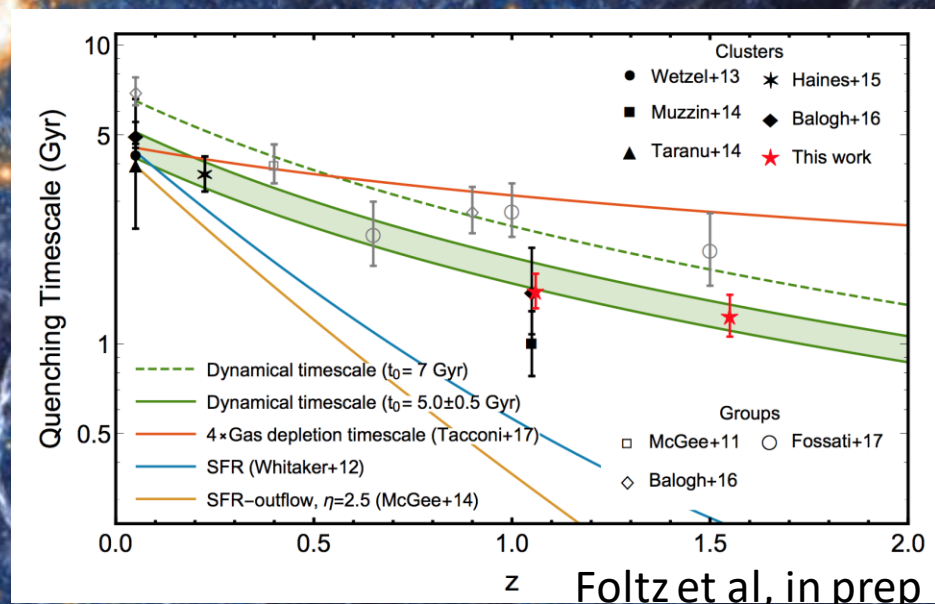
University of California Riverside (UCR)

gillianw@ucr.edu

Talk Title: **Galaxy Quenching in Clusters and Growth of BCGs**

Scientific Focus and Methods:

- Observations of Clusters/Groups (SpARCS, GCLASS, GOGREEN)
- Causes of Environmental Quenching
- Growth of Massive Galaxies



BENEDETTA VULCANI

UNIV. OF MELBOURNE - INAF OAPD

- The influence of the environment on galaxy properties
- Galaxy evolution from $z=1$
- Spatially resolved vs integrated galaxy properties
- Systematic comparisons between observations and simulations

HUNTING DOWN THOSE
RESPONSIBLE FOR THE OBSERVED
SPATIAL DISTRIBUTION OF GAS IN
GALAXIES AT $Z=0.-0.5$

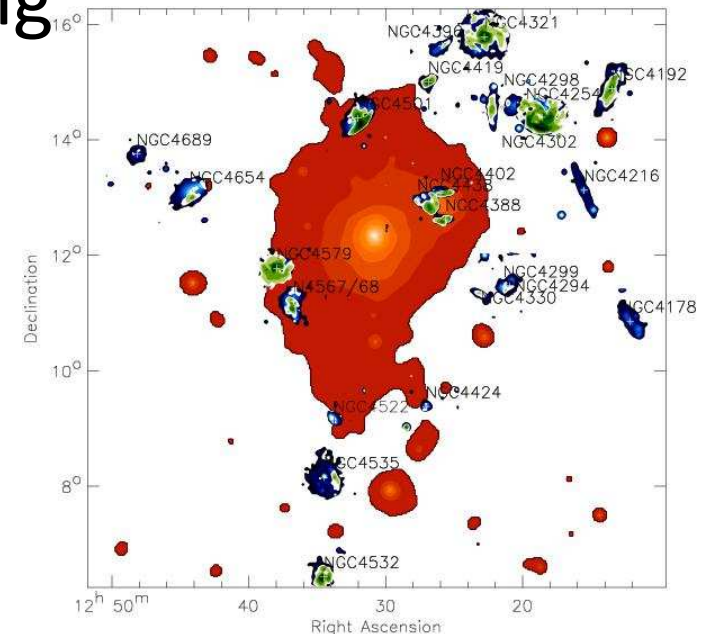


Bernd Vollmer, staff astronomer
CDS, Observatoire astronomique de Strasbourg
Bernd.Vollmer@astro.unistra.fr

Talk Title: Galaxy evolution in the Virgo cluster

Scientific focus and methods:

- Analytical/dynamical modelling
- HI/CO/radio continuum observations
- Galaxy interactions - ISM
- Gas tori around AGN



Stephanie Tonnesen

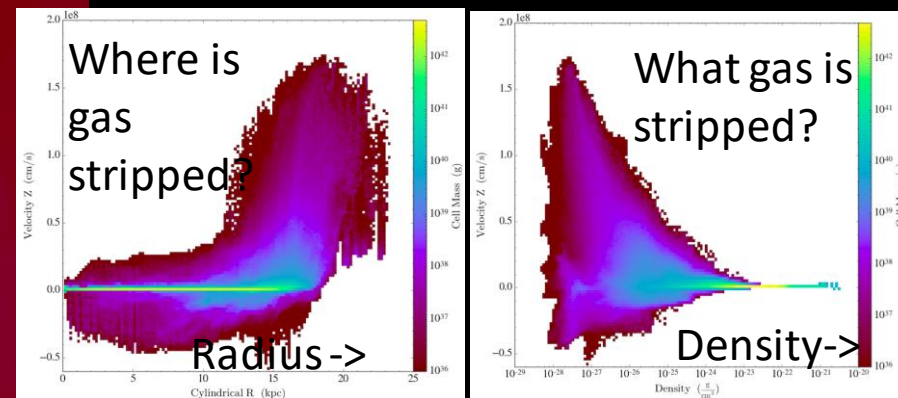
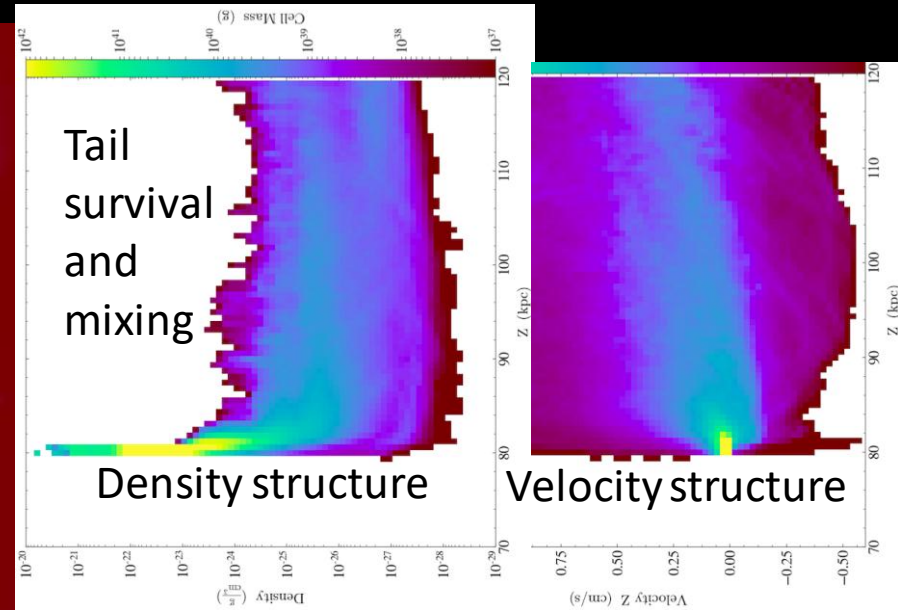
Flatiron Institute, CCA
stonnes@gmail.com



I use Hydro/MHD
simulations:
Enzo, Athena,
Analysis-yt, python

Main Science Question:
How is galaxy evolution
influenced by
environment?

- Ram Pressure Stripping
(can RPS be used to probe the
environment?)
- Does the large-scale
environment matter (on
the ≥ 20 Mpc scale)?





Elisa Toloba

Assistant Professor
University of the Pacific
(California)



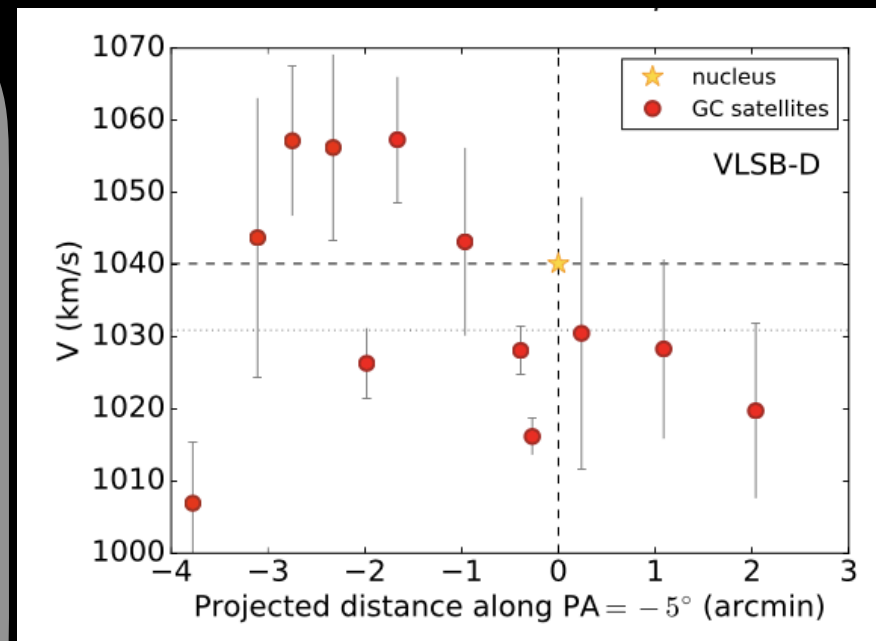
Talk title: Ultra-diffuse galaxies: nature vs. nurture

Main Research Topic:

✱ Quenched galaxies (kinematics, dark matter, stellar populations, globular clusters, environmental effects on all these properties)

Specific objects I'm currently working on:

- ✱ Dwarf early-types
- ✱ Dwarf spheroidals
- ✱ Ultra-diffuse galaxies



Rotation curve of an ultra-diffuse galaxy
Toloba et al. (ApJL, submitted)

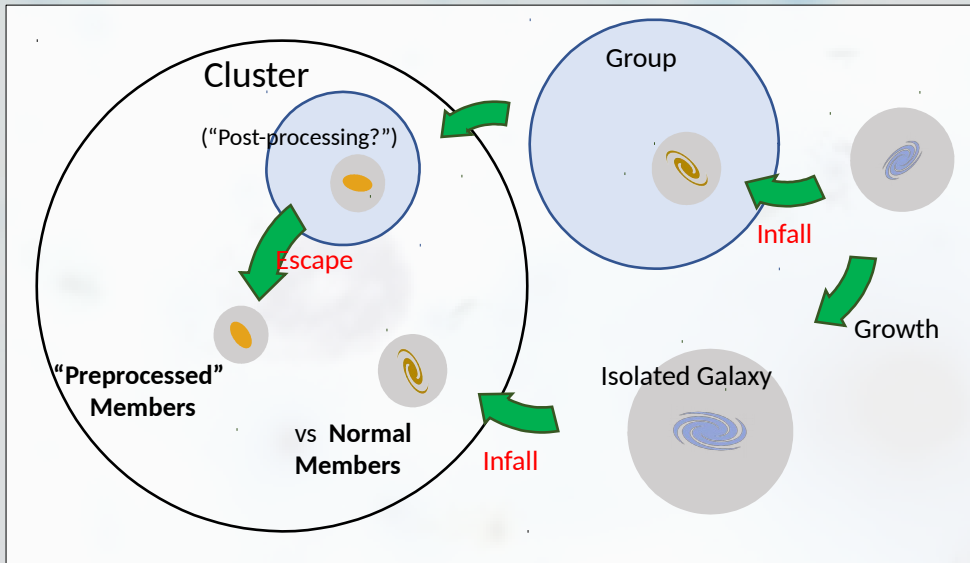


Rory Smith, Staff Scientist

Korea Astronomy & Space Science Institute (KASI)
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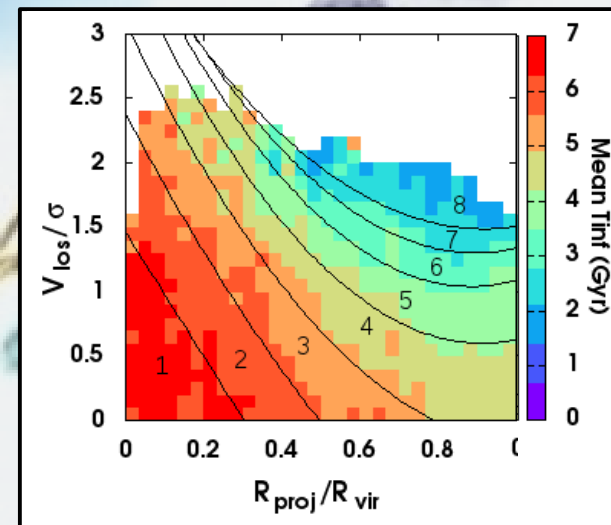
Talk 1) Preprocessing



- Roughly half of cluster galaxies previously in a host
- Use cluster zoomed cosmological simulations
- Investigate significance for tidal mass loss of cluster population

Talk 2) Phase-space Diagrams

- Use cluster zoomed cosmological simulations
- Maximise knowledge gained from applying phase-space diagrams
- Applied to clusters and groups





Paolo Serra

INAF - Osservatorio Astronomico di Cagliari
Talk: Tidal effects in groups and the Fornax cluster



Image credit: ESO. Acknowledgement: Aniello Grado and Luca Limatola.

My research on galaxies

HI mass, morphology, dynamics in early-type galaxies (Atlas^{3D})

Accretion and removal of gas

Study of individual groups and clusters (nearby groups, Coma, Fornax)

Large HI surveys with SKA and its precursors (WALLABY)

Comparison with simulations (EAGLE)



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RUBÉN SÁNCHEZ-JANSSEN

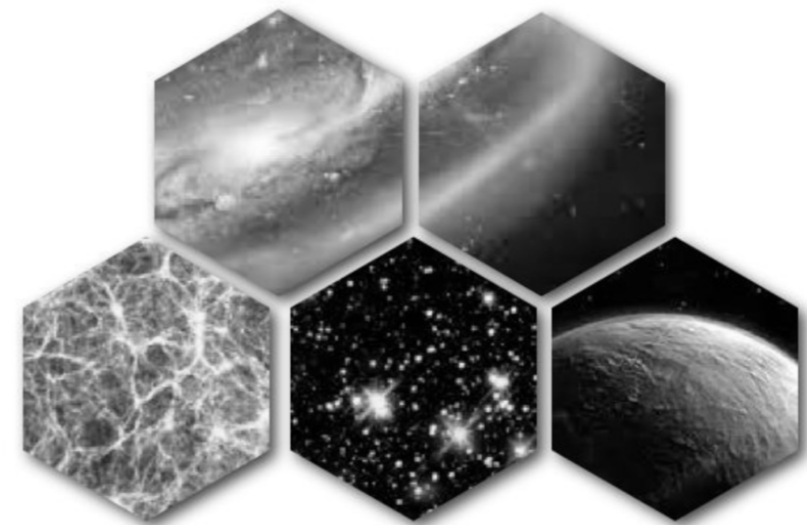
ASTRONOMER / INSTRUMENT SCIENTIST
UK ASTRONOMY TECHNOLOGY CENTRE
ROYAL OBSERVATORY EDINBURGH

FUTURE INSTRUMENTATION FOR LARGE TELESCOPES (ESPECIALLY MOS)

PROPERTIES OF LOW-MASS STELLAR SYSTEMS IN HIGH-DENSITY ENVIRONMENTS:

DWARF GALAXIES, NSCS, UCDS, GCS

TALK: *CLUSTER DWARFS, THEIR STAR CLUSTERS, AND WHAT IT ALL MEANS*

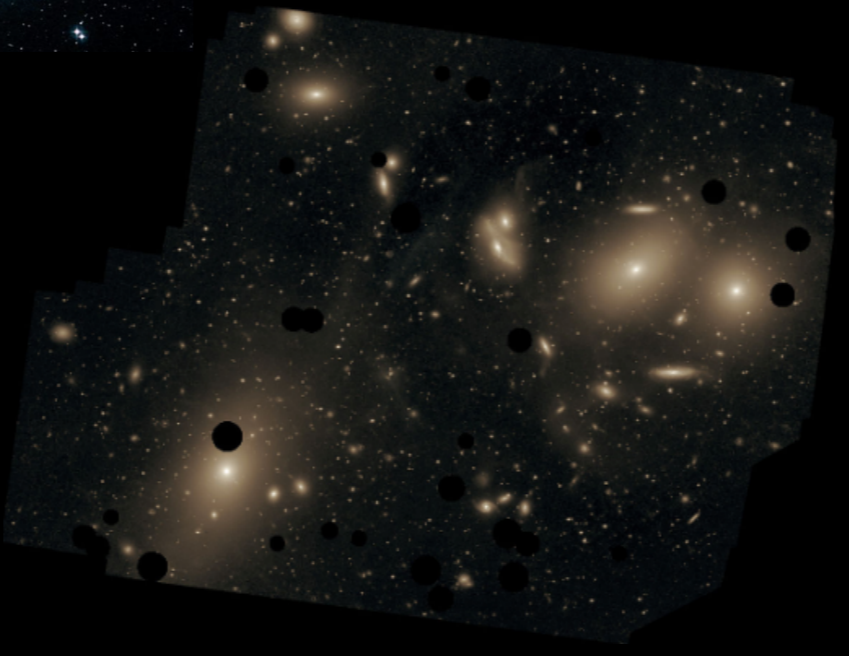
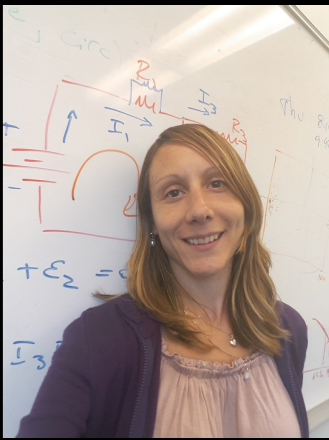


MOSAIC

Laura V. Sales

Assist. Prof. UC Riverside (it's 28 C there right now!)

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



Teymoor Saifollahi
saifollahi@astro.rug.nl

PhD Student - SUNDIAL
Kapteyn Astronomical Institute
University of Groningen, Netherlands

RESEARCH INTEREST

Environmental Effects in Galaxy Evolution
Multi-wavelength Astronomy
Small scale clumps of dark matter
Observational Techniques

CURRENT ACTIVITIES

Near-Infrared view of Fornax cluster
Stellar populations of Fornax dwarf galaxies

FUTURE WORK

Formation History of dwarf galaxies
Galaxy formation and evolution with
novel machine learning techniques



university of
 groningen

faculty of science
and engineering

kapteyn astronomical
institute