Dynamics meets kinematic tracers

BUSINESS CARDS

one slide, one minute

jjadams@obs.carnegiescience.edu

- Postdoctoral Research Associate, Carnegie Observatories, Pasadena, CA

- Interests:

  - Dark matter (DM) halo properties and measurements

  - Properties of Lyman-α emitter galaxies at z~2-3

  - Metallicities and star formation histories of Local Group dwarfs

- "Cusped models not ruled out", DM distributions from stellar kinematic in

late-type dwarfs

Results for NGC 2976, appears as DM-core through gas kinematics, DM-cusp through stellar kinematics

amorisco@ast.cam.ac.uk
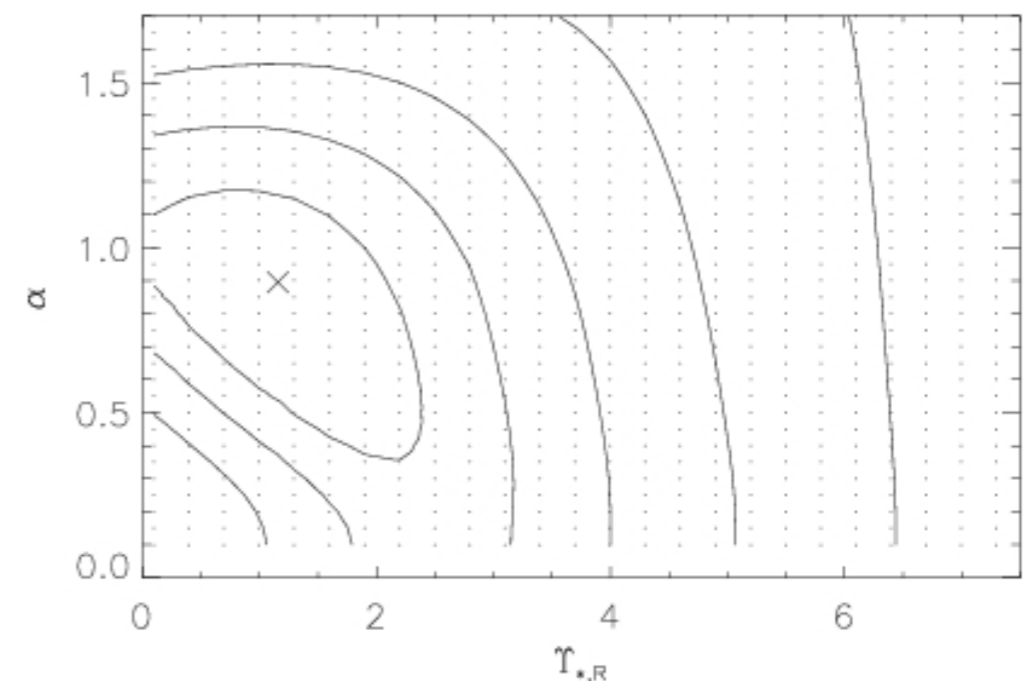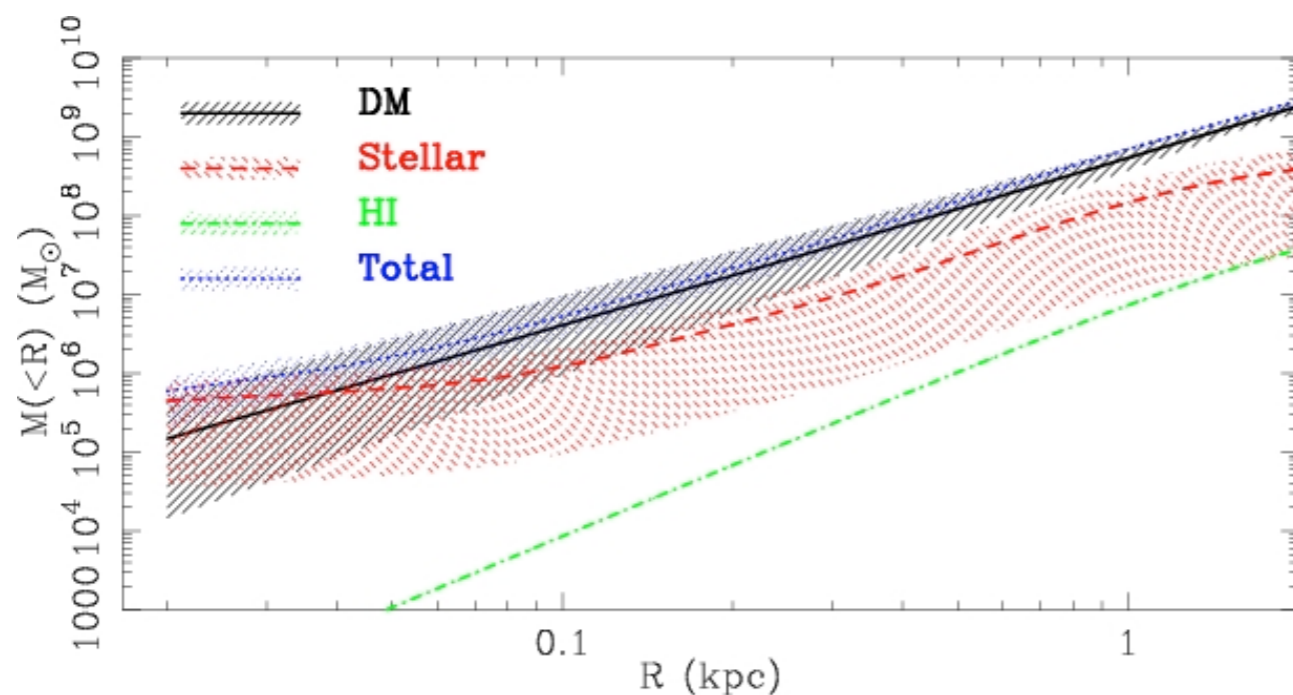
- Ph.D. Student, IoA, University of Cambridge

  - Dwarf Spheroidals` kinematics
  - Dark matter density profile
  - Orbital structure and formation history

- talk: Line Profiles from discrete Kinematic Data

Teresa Antoja

antoja@astro.rug.nl
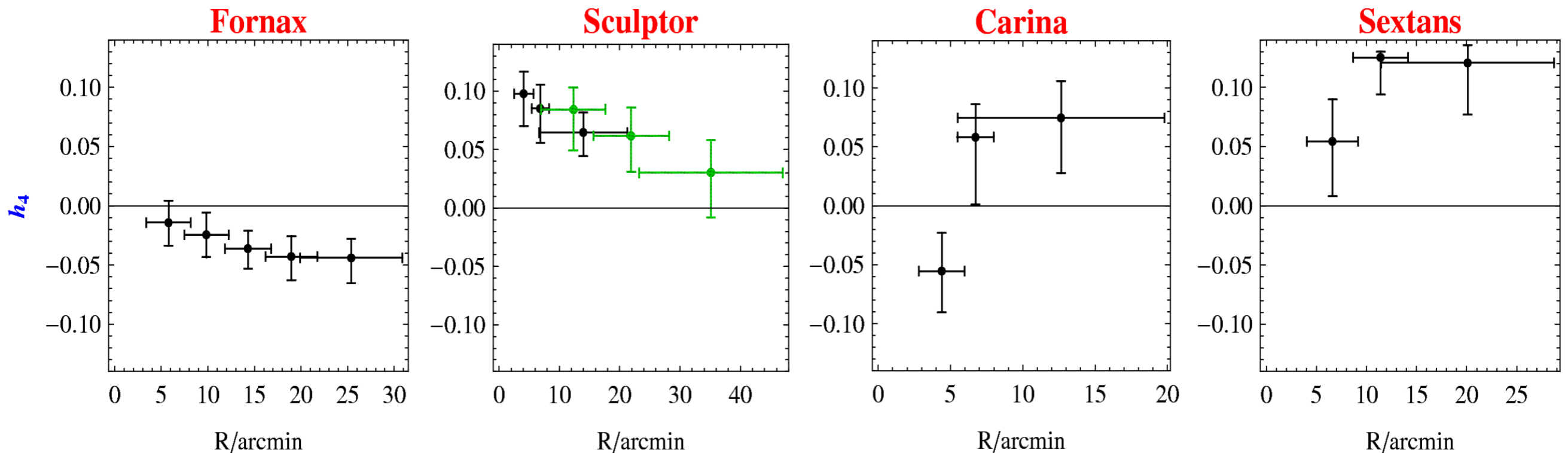
- postdoc @ Kapteyn Astronomical Institute (University of Groningen)

- interests:

  - Kinematic substructure induced by the MW bar and spiral arms
  - Gaia and follow-up surveys
  - Detection limits for Ultra Faint Dwarf Galaxies with Gaia

- topic: Kinematic groups in distant disc regions observed by RAVE

Matteo Barnabè
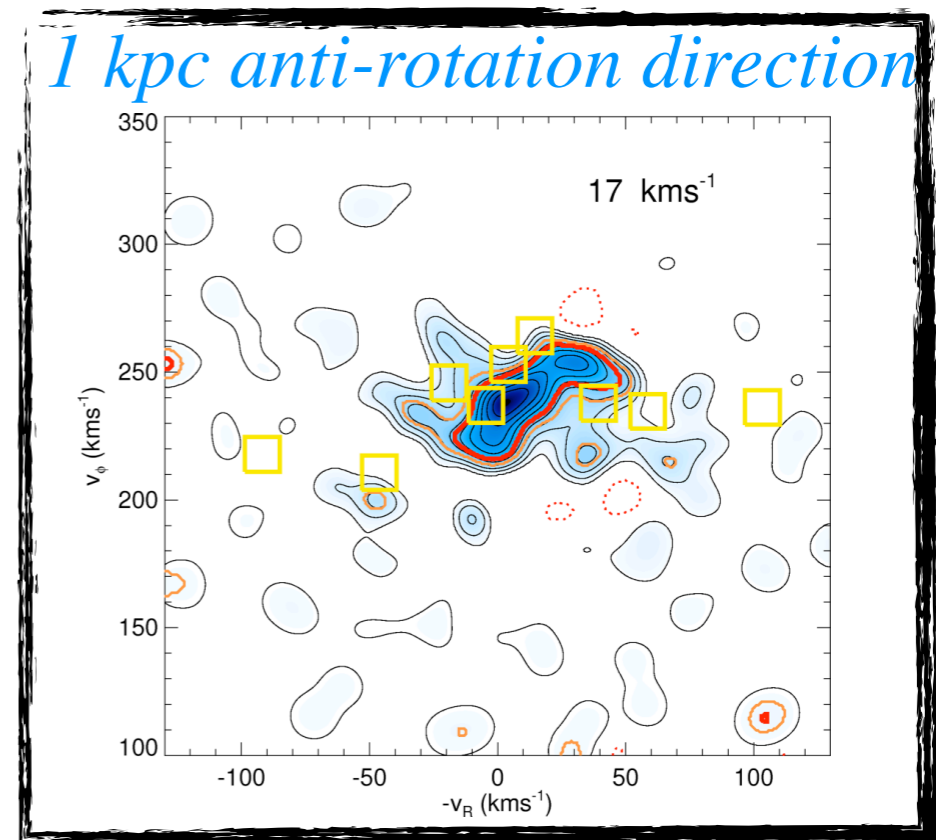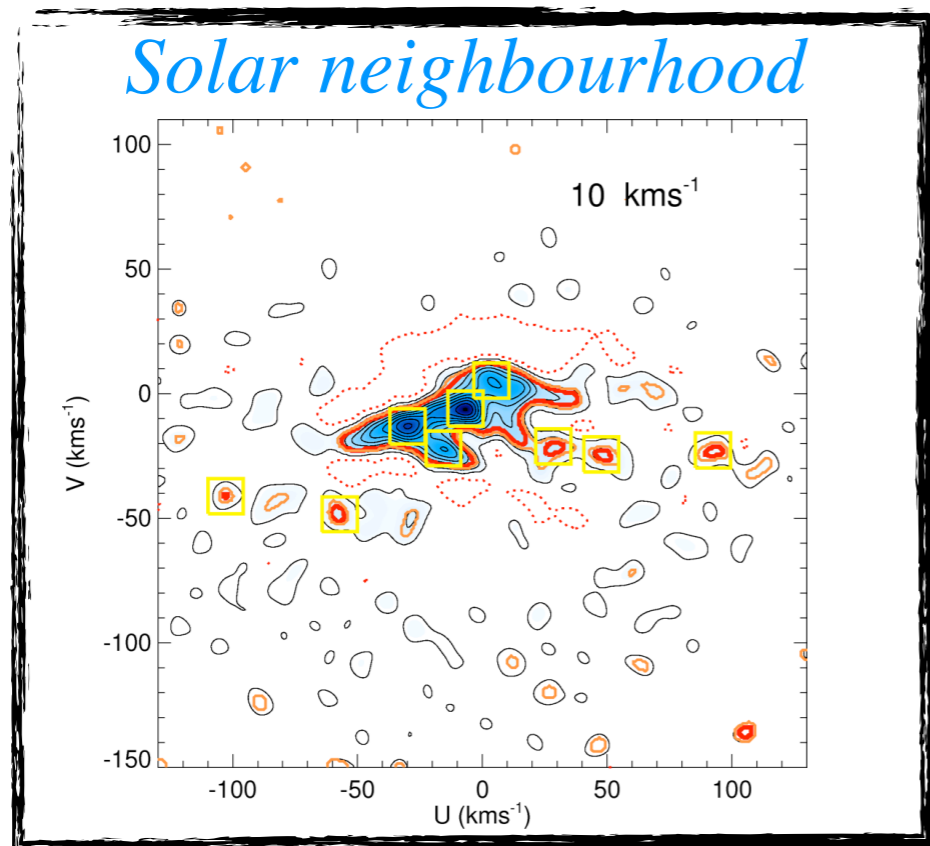
❑ postdoc at KIPAC/SLAC, Stanford University

❑ interests:
- studying the structure of early- and late-type galaxies by combining gravitational lensing and stellar dynamics
- galaxy formation and evolution
- galactic microlensing

❑ talk: "CAULDRON: combining lensing and dynamics"

bellini@stsci.edu
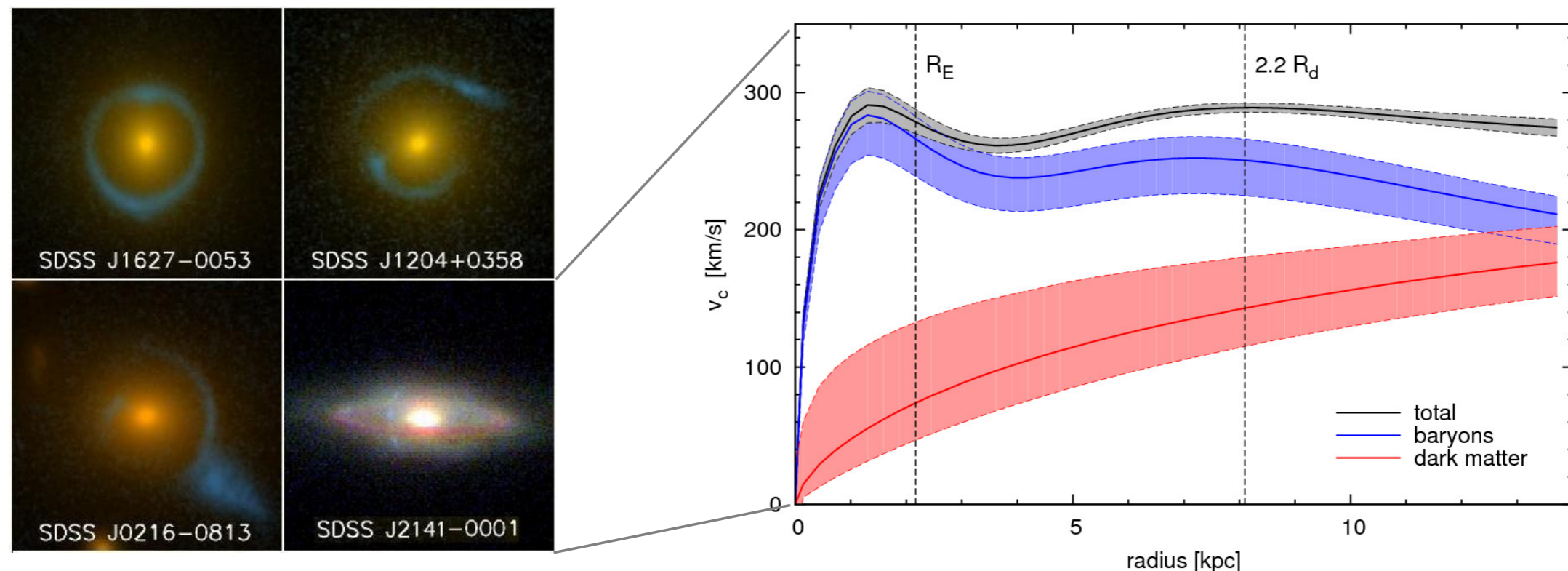
- postdoc at STScI with Rœland van der Marel & Jay Anderson
- interests:
  - resolved stellar populations
  - globular clusters
  - proper motions
- talk: HST proper motions for globular clusters

James Binney

binney@thphys.ox.ac.uk
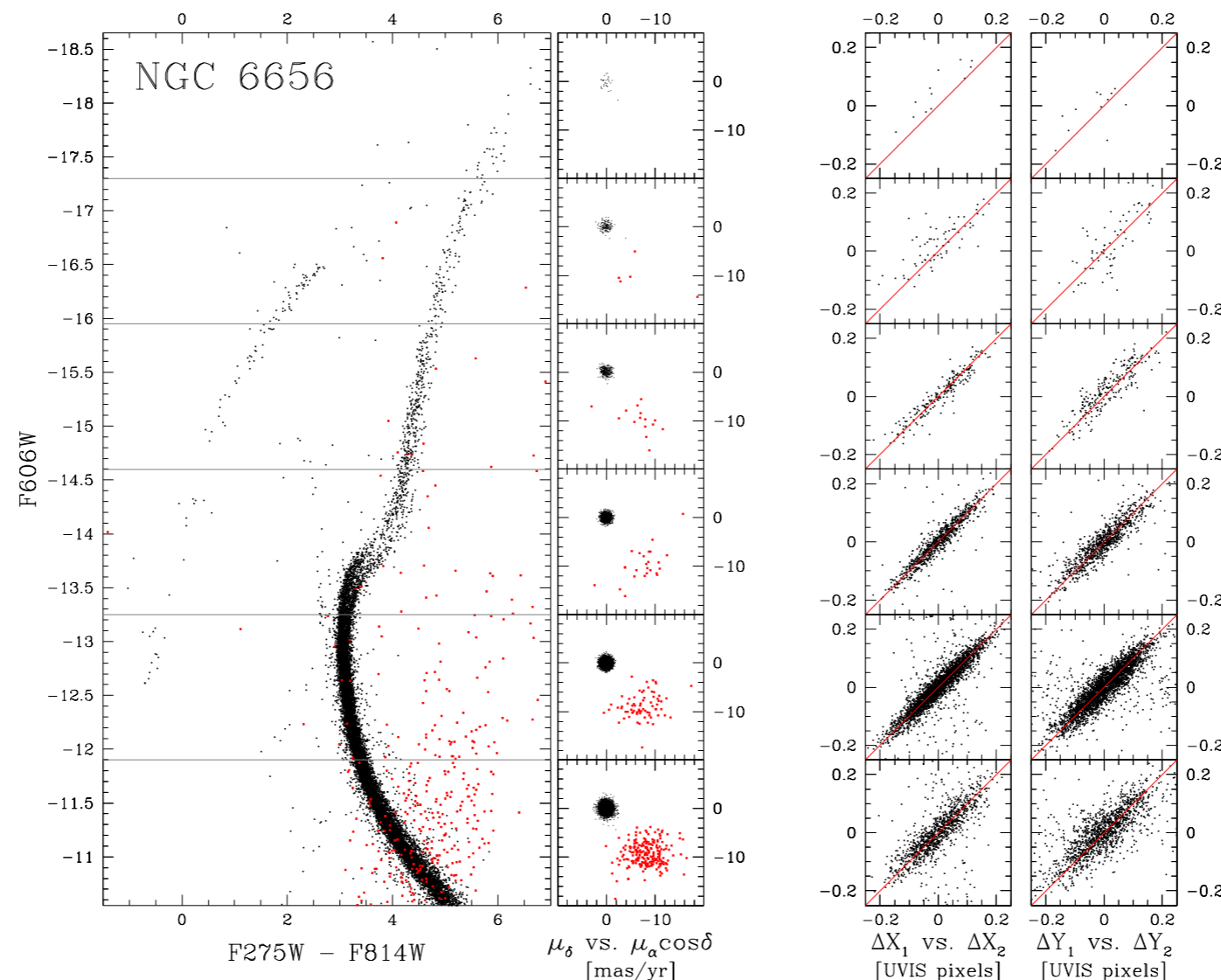
- Head of the Rudolf Peierls Centre for Theoretical Physics

- interests:

  - Structure of galaxies

  - Formation of galaxies

  - Physics of the intergalactic medium

- talk: What models can do for you
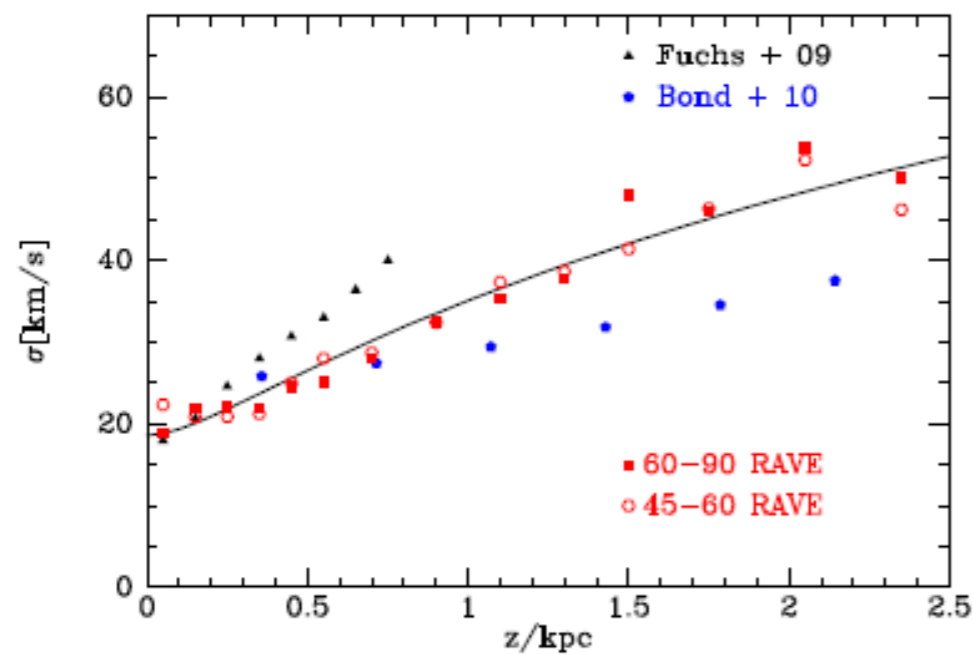
Sigma_z(z) above Sun predicted by an
analytic DF (Burnett thesis 2010)
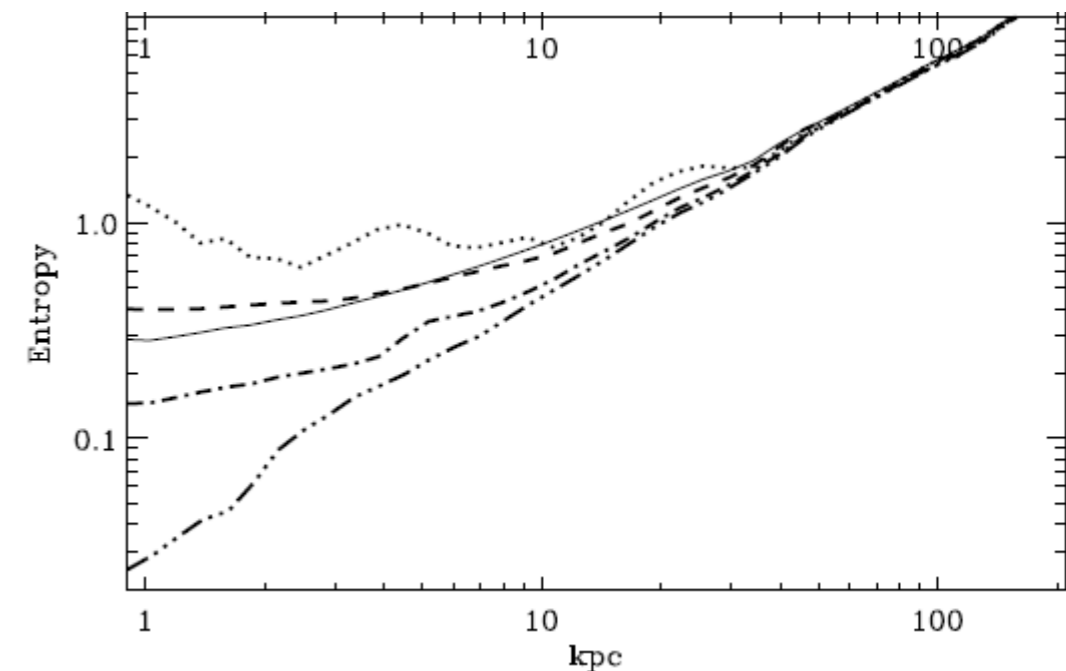

Entropy in Hydra at various times from hydro
simulations. These profiles resemble ensemble
of measured entropy profiles (Omma thesis 2005)

Business Card : name, institution

Dynamics meets kinematic tracers, Ringberg, 10-14 April 2012

- Hubble Fellow, Institute for Advanced Study

- interests:

  - Milky Way structure and evolution
  - Data modeling and analysis techniques
  - Cosmology on large and small scales

- talk: APOGEE constraints on the Milky Way rotation curve

arXiv:1111.1724

arXiv:1202.2819

breddels@astro.rug.nl
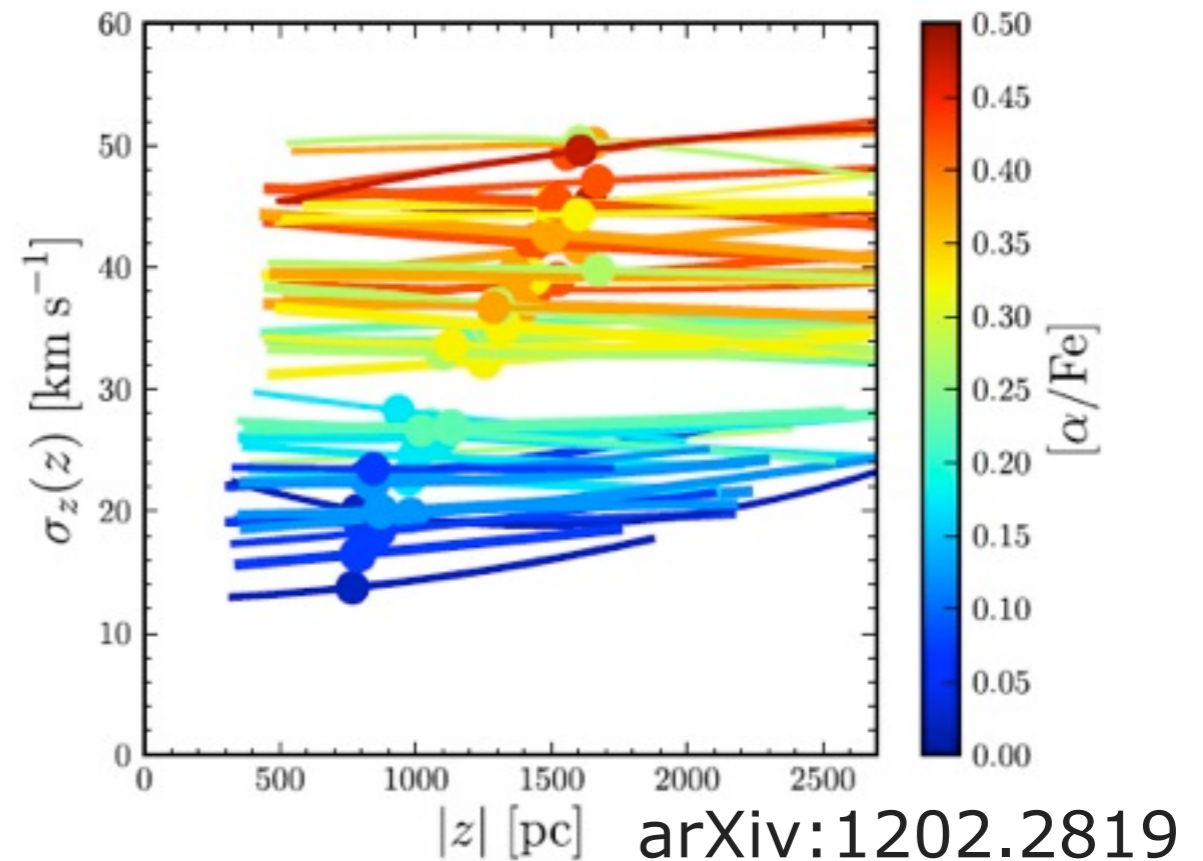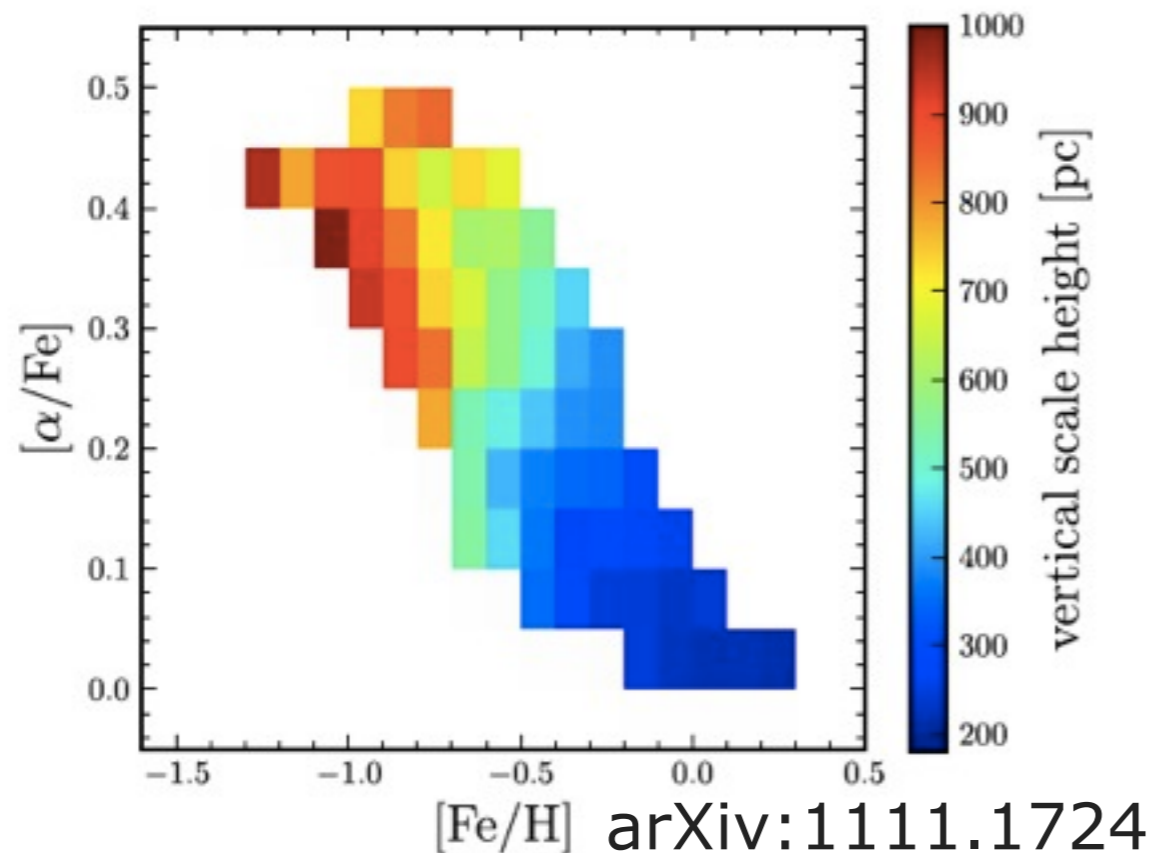
- PhD student, Kapteyn Institute, Groningen (the Netherlands)

- interests:

  - Dynamic modeling (of dSph galaxies)
  - Formation scenario/history (of dSph galaxies)

- Orbit based dynamical models of the Sculptor dSph galaxy
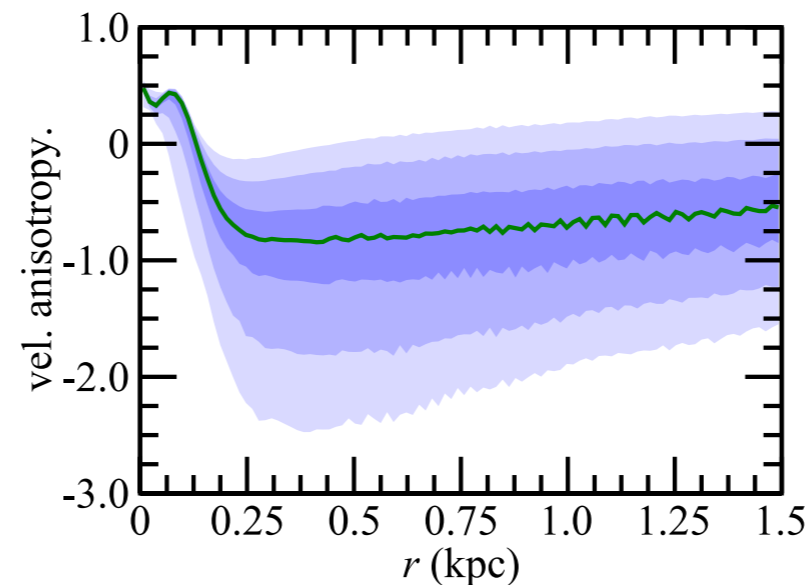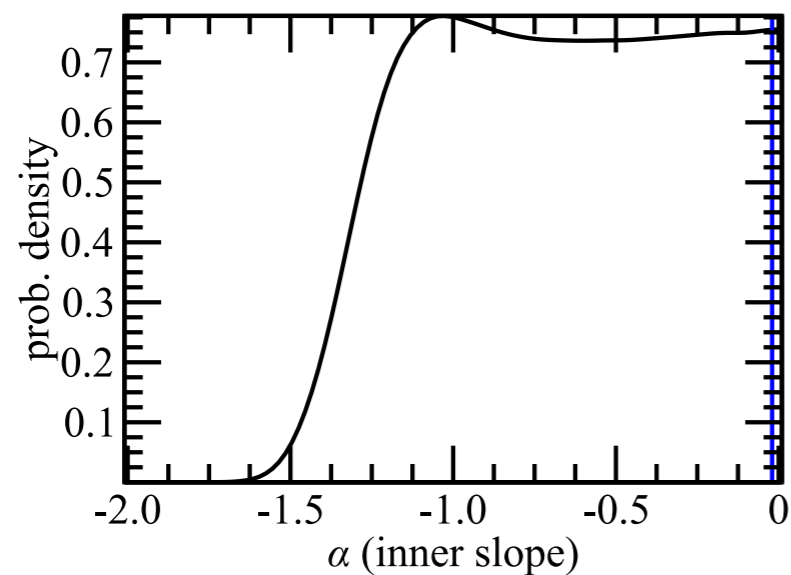
- Faculty, Sterrewacht Leiden, Leiden University
- Interests
  - ▶ Gaia: Science Team, photometric data processing, radiation damage mitigation, attitude modelling, archive preparations, commissioning phase planning
  - ▶ Looking for substructure in the Galactic halo
  - ▶ The sun's siblings and birth cluster
- Contribution: Gaia early data releases, archive access facilities, support for science preparations, *Gaia in a virtual machine*
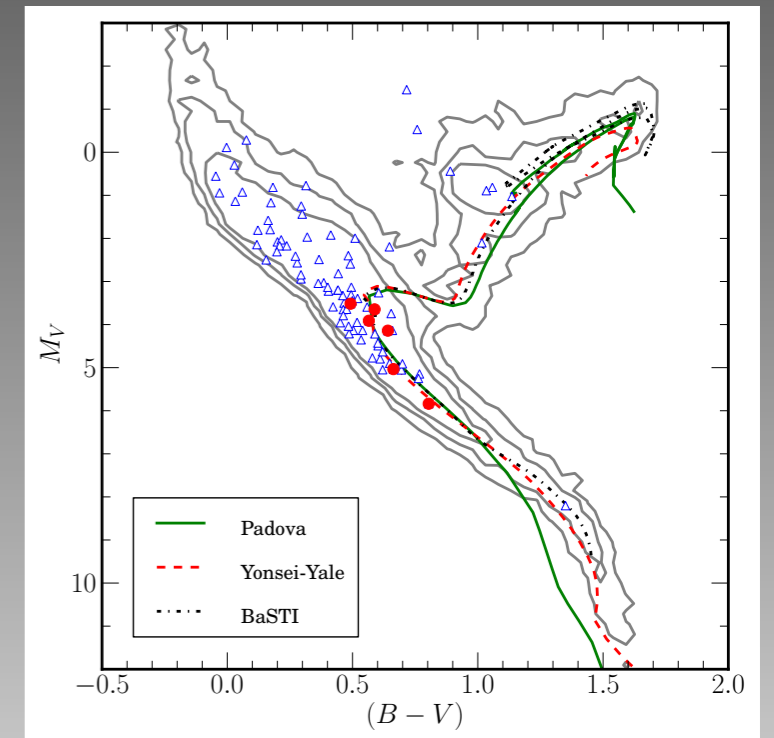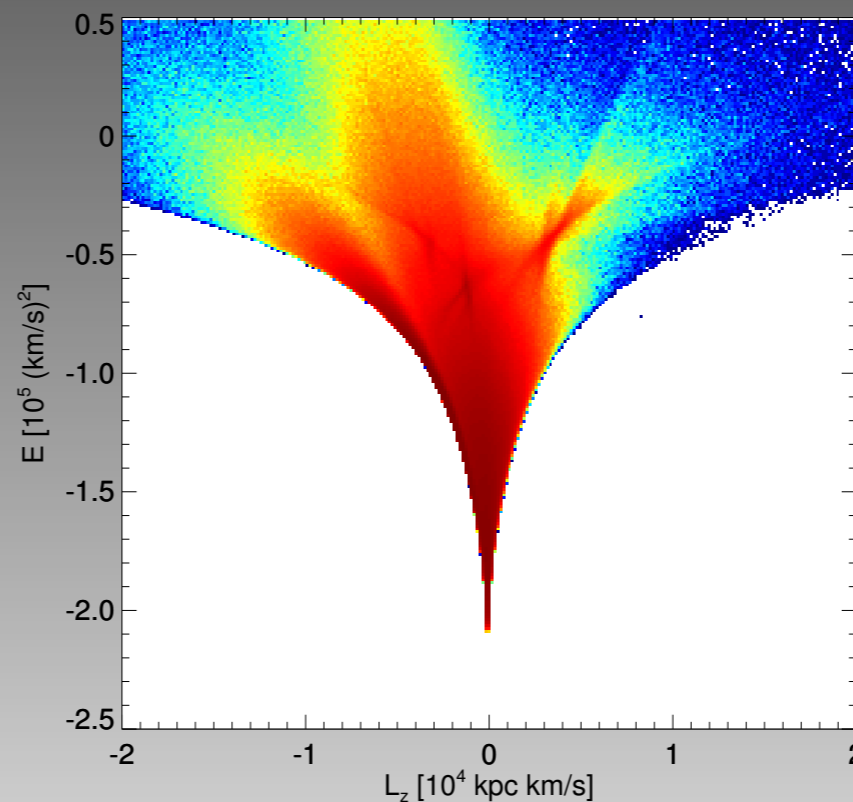
buedenbender@mpia.de

Alex Büdenbender

* PhD student at the MPIA / dynamics group with Glenn van de Ven

* Interests:

  * gravitational potential of the Milky Way

  * kinematics of stellar populations

  * dark matter distribution in the solar neighbourhood

  * Jeans and Schwarzschild method

* Talk: From vertical to axisymmetric modelling in the solar neighbourhood

Michele Cappellari

cappellari@astro.ox.ac.uk

UNIVERSITY OF **OXFORD**

- Royal Society Research Fellow, Faculty

- Interests:

  - Evolution of galaxy structure

  - Supermassive black holes, dark matter and the IMF

  - Galaxy kinematics and population from integral-field spectroscopy

- Talk: Jeans models of 260 galaxies with MCMC

- Variation of the IMF in ETGs

ATLAS 3D

sotiris@mpe.mpg.de

Sotiris Chatzopoulos
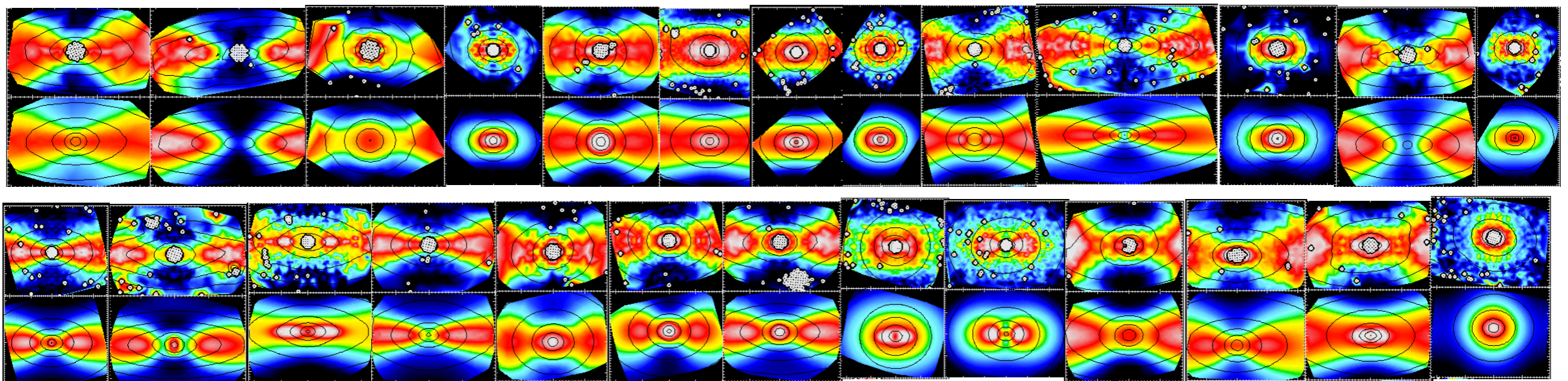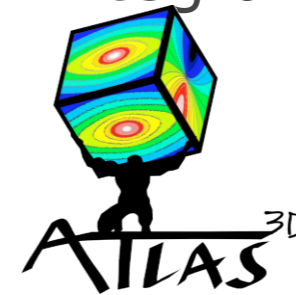
- PhD student at Max Planck Institute for Extraterrestrial Physics

- Interests:

  - Disk galaxies

  - N-body simulations

  - Modeling galaxies with their black holes

- Currently working on particle models with black holes
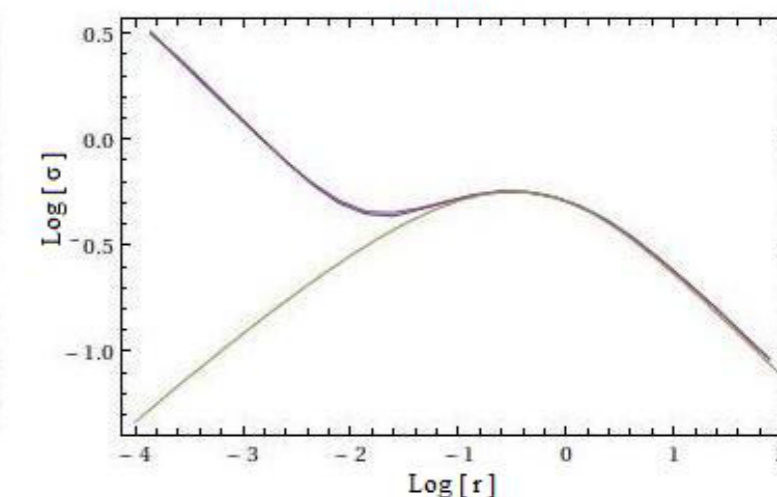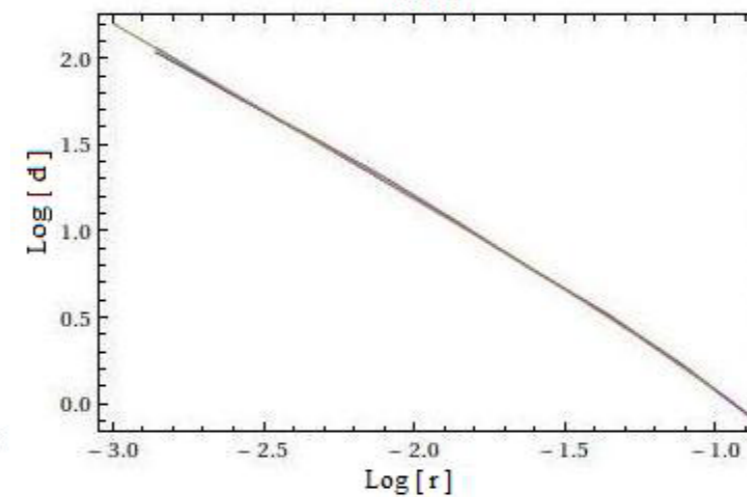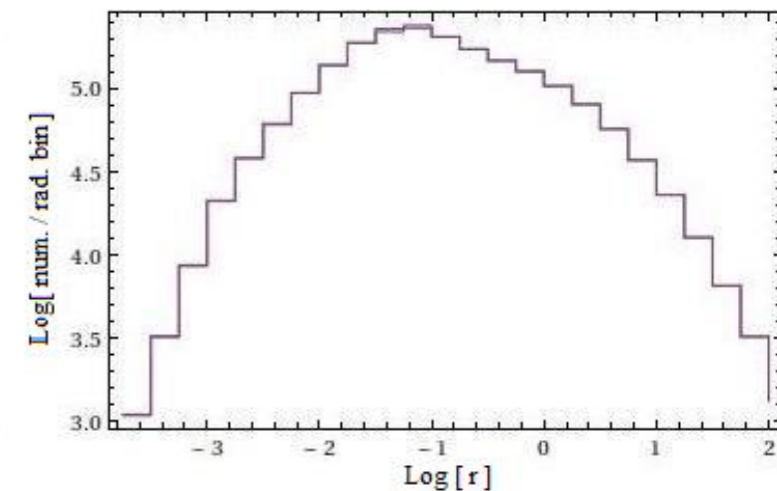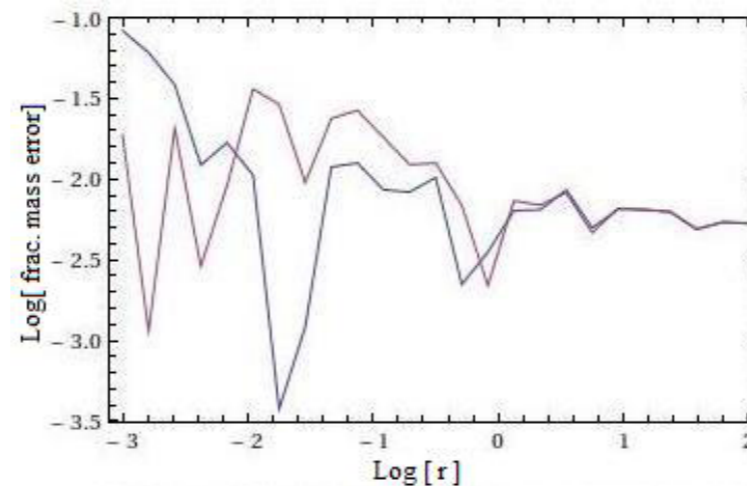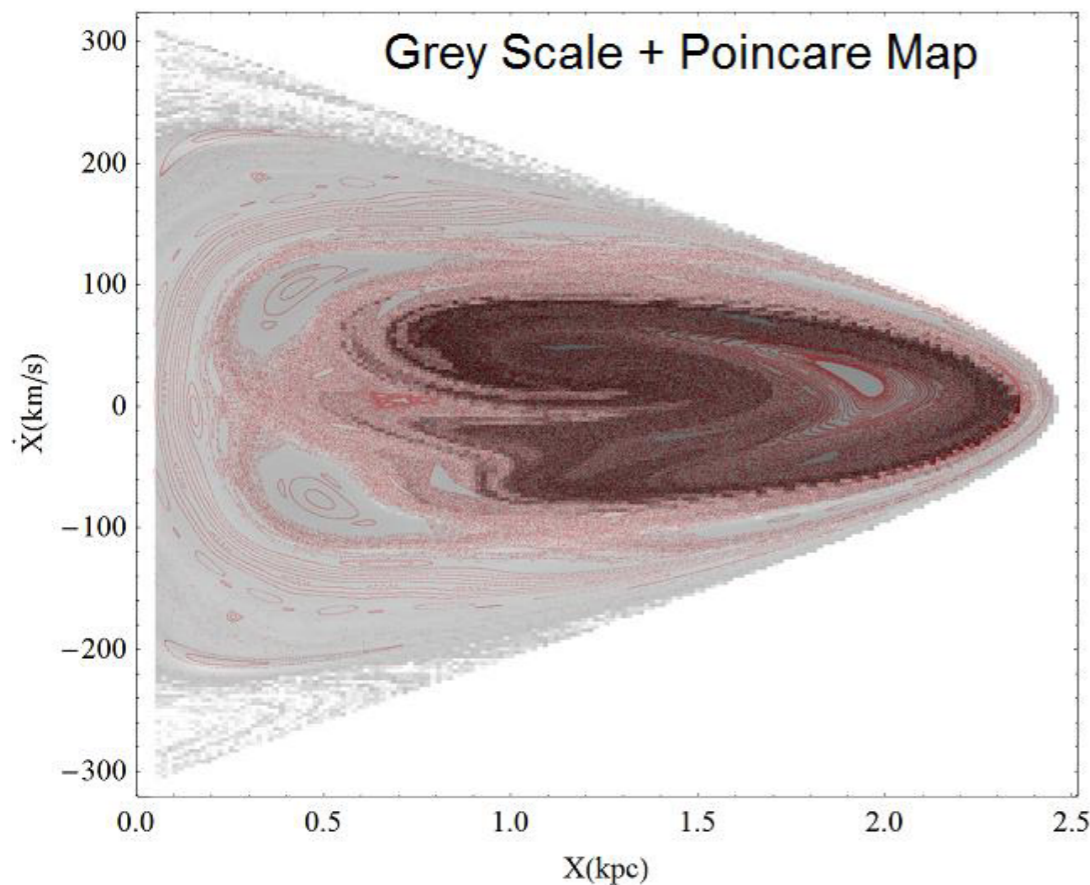
vpdebattista@gmail.com   **Victor P. Debattista**

position:

RCUK Fellow/Senior Lecturer, Jeremiah Horrocks Institute, UCLan

interests:

radial migration in disk galaxies
black holes and nuclear star clusters
the Milky Way
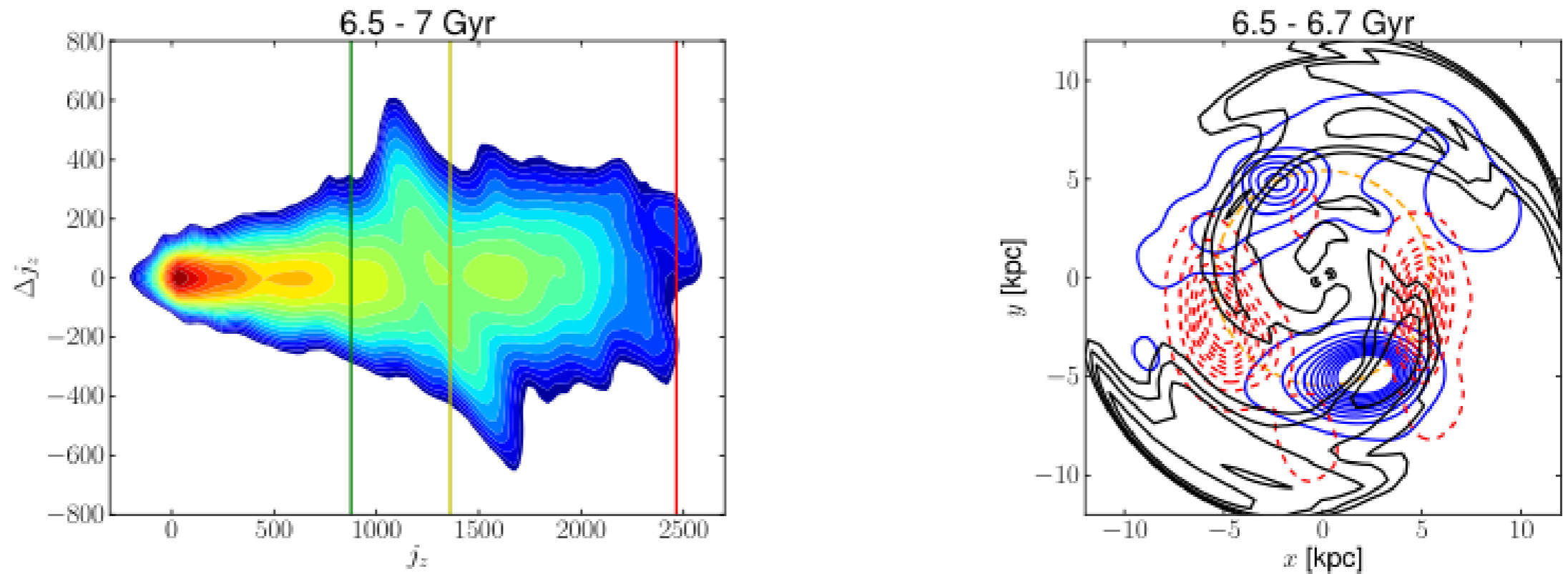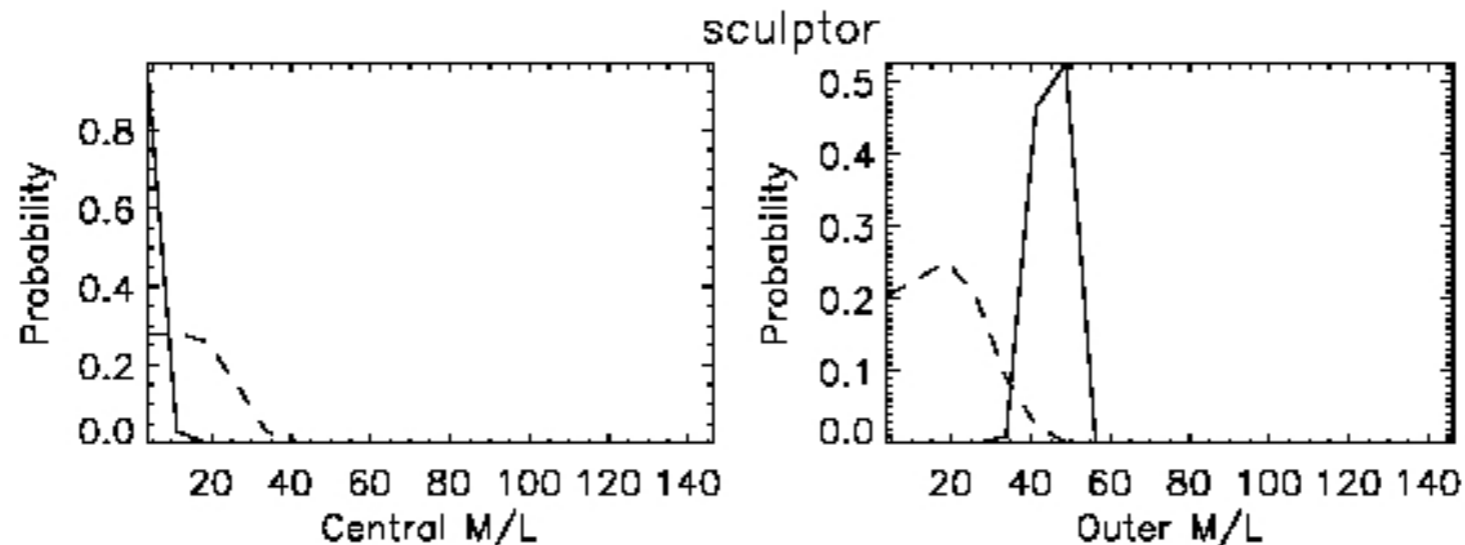
talk:

Radial migration of stars in the Milky Way

Figure 1: Distribution of migrating stars

Walter Dehnen

wd11@le.ac.uk

- University of Leicester, England

- interests:

  - general dynamics and modelling

  - galaxy formation and evolution

  - numerical methods (N-body, SPH)

- short talk: *Orthogonal basis functions for dynamic modelling*

I present several sets of bi-orthogonal basis functions of sky position and line-of-sight velocity, which can be used in several ways for quantitative comparison of models with discrete and/or continuous kinematic data.

Mark den Brok

- PhD student at Kapteyn Astronomical Institute

- Interests:

  - Internal dynamics of dwarf galaxies

  - Nuclear star clusters and globular clusters

- Contribution:

  - Discrete axially symmetric models of four dwarf spheroidals

Wyn Evans

- Prof Wyn Evans, Institute of Astronomy, Cambridge University

- interests:

  - dwarf spheroidals, ultrafaints, M31, Milky Way, NearField Cosmology

- Talk: "A core dump" -- summary of work on multiple populations

kcf@mso.anu.edu.au

Ken Freeman
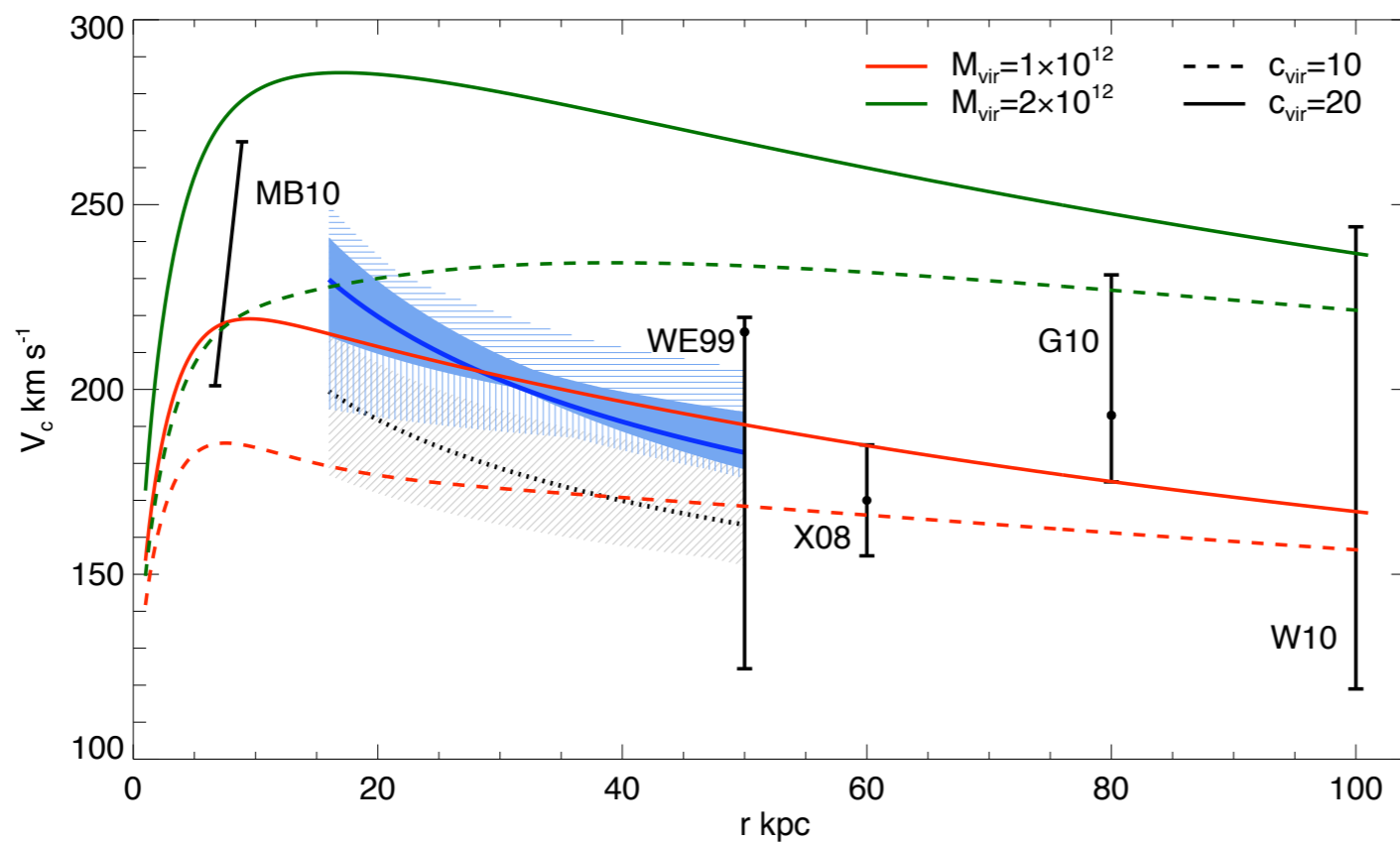
Professor, Research School of Astronomy & Astrophysics, The Australian National University

- interests:

  - disk galaxies

  - Galactic bulge

  - chemical tagging and Galactic reconstruction

  - star streams

  - stellar age-velocity-metallicity relation

  - globular clusters

  - dark matter scaling laws

- talk: Kinematics of the bulge

gerhard@mpe.mpg.de

- Research group leader, Max Planck Institute for Extraterrestrial Physics

- Research interests:

  - Dynamics, structure, and evolution of galaxies

  - Dark matter halos, dynamics of stellar halos and intracluster light

  - The barred Milky Way. Dynamical modeling with M2M
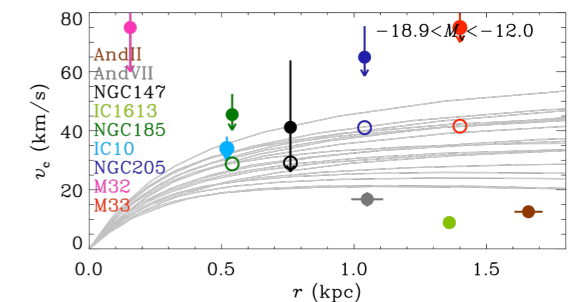
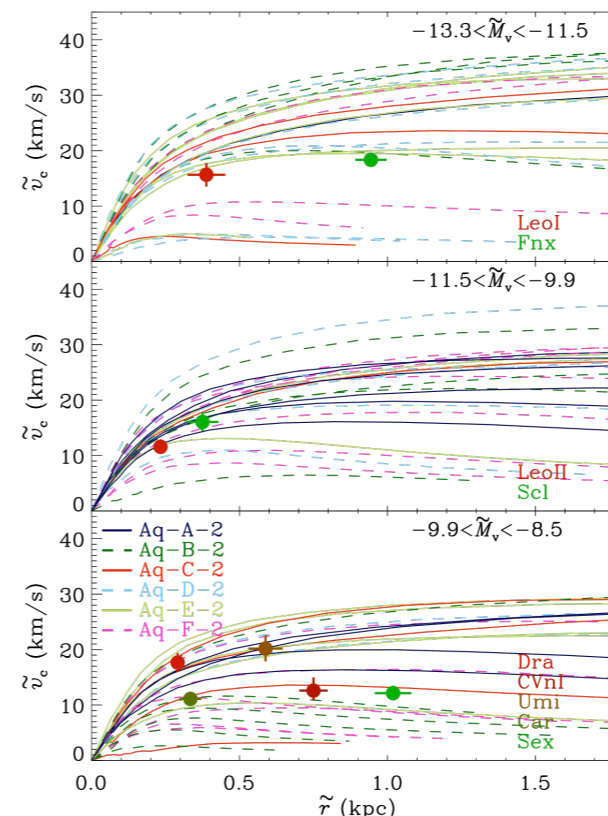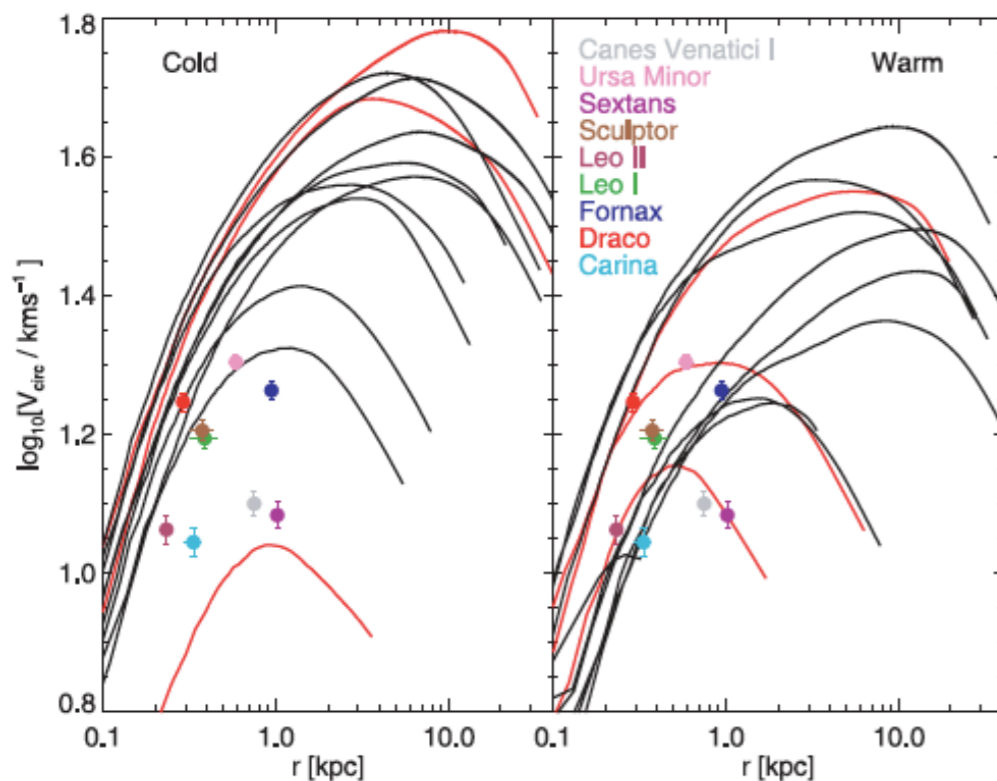- Talk: What next in dynamical modeling?

- Institute of Astronomy, Cambridge

- interests:

  - Discovering things: and hence big surveys
  - Dark matter on small scales: and hence kinematics
  - Where stars formed: and hence chemistry
  - Puzzling over the tightness of correlations

- talk: Discrete surveys
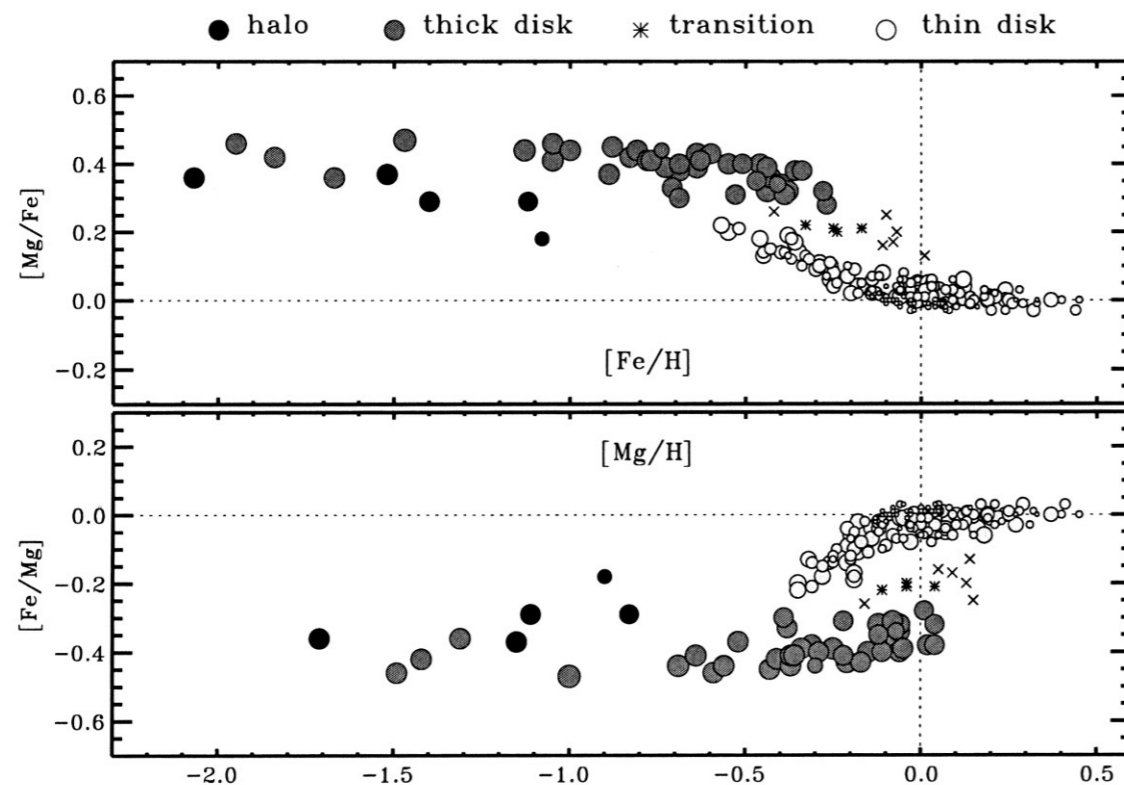
Why are these correlations so tight —
the age range involved is large.

ahelmi@astro.rug.nl

- Professor at Kapteyn Institute, University of Groningen

- Research interests:

  - Formation, evolution and dynamics of Local Group galaxies

  - Nature of dark matter

  - Dwarf galaxies

- Advert:

Not too big, not too small: the dark halos of dSph galaxies in the Milky Way

Boylan-Kolchin et al. 2011; Lovell et al. 2012: too many subhalos in CDM more massive than Milky Way dSph?

M31: no room for missing massive satellites

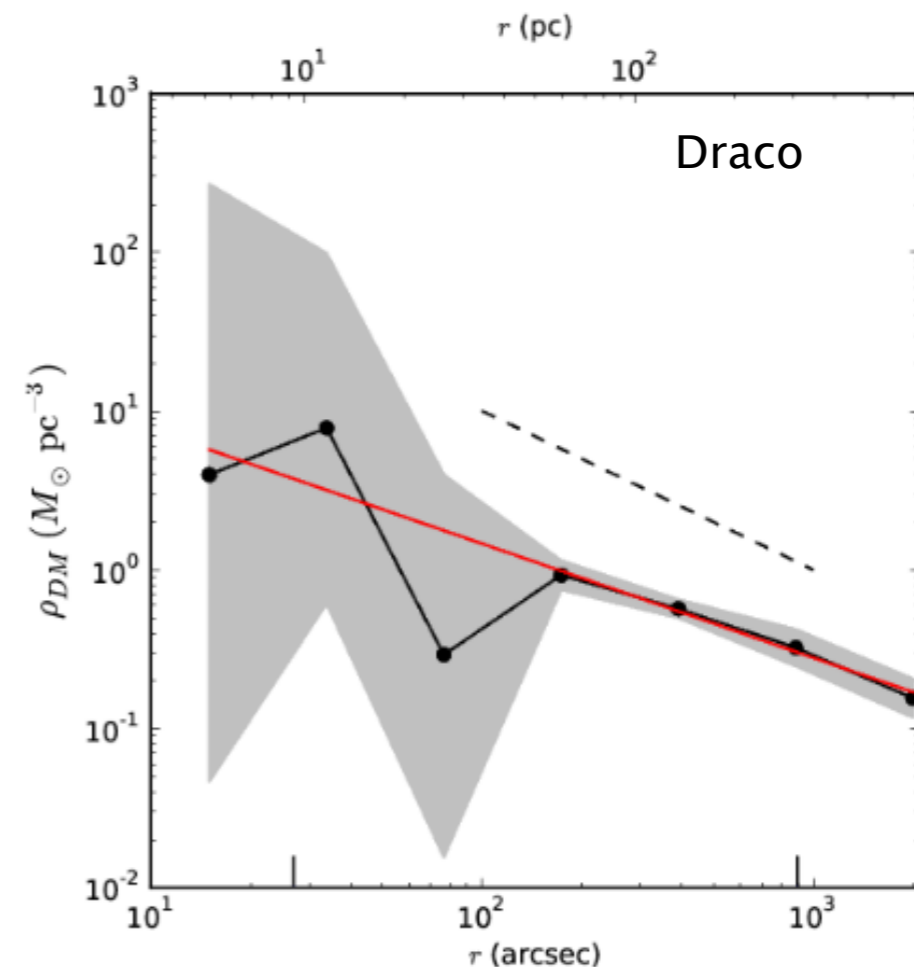Aq-halos scaled to 8×10^{11} Msun

Vera-Ciro et al. 2012

John Jardel

Graduate student, the University of Texas (advisor: Karl Gebhardt)

Interests:

- Schwarzschild modeling
- Dark matter profiles of dSphs
- Black holes, DM in ellipticals

Talk: Measuring Dark Matter Profiles Non-parametrically in dSphs

jardel@astro.as.utexas.edu

jin@astro.rug.nl   *Shoko Jin*

- *Veni postdoc at Kapteyn Institute, Groningen*
- *interests:*

  Milky Way halo inhabitants ➔ *halo potential*

  dynamics of

dwarf galaxies

kinematics - dynamics

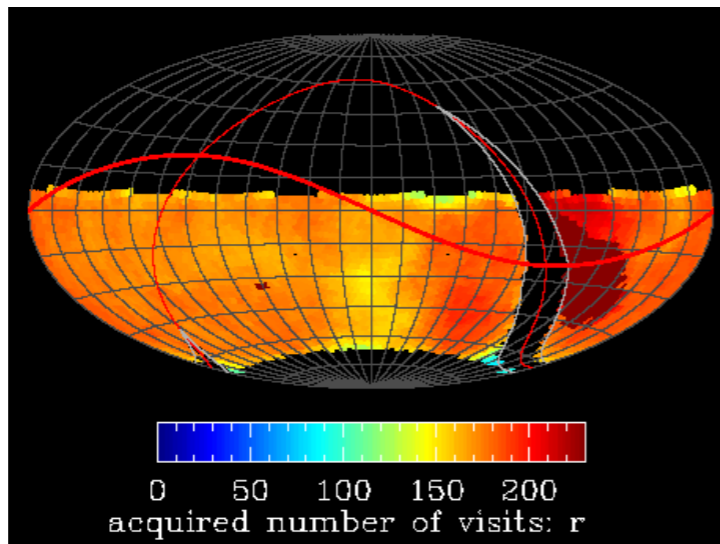*(fragments of)*

stellar streams

kinematics - dynamics

(aspects of)
Galactic potential

mjuric@lsst.org

- Data Management Project Scientist, Large Synoptic Survey Telescope
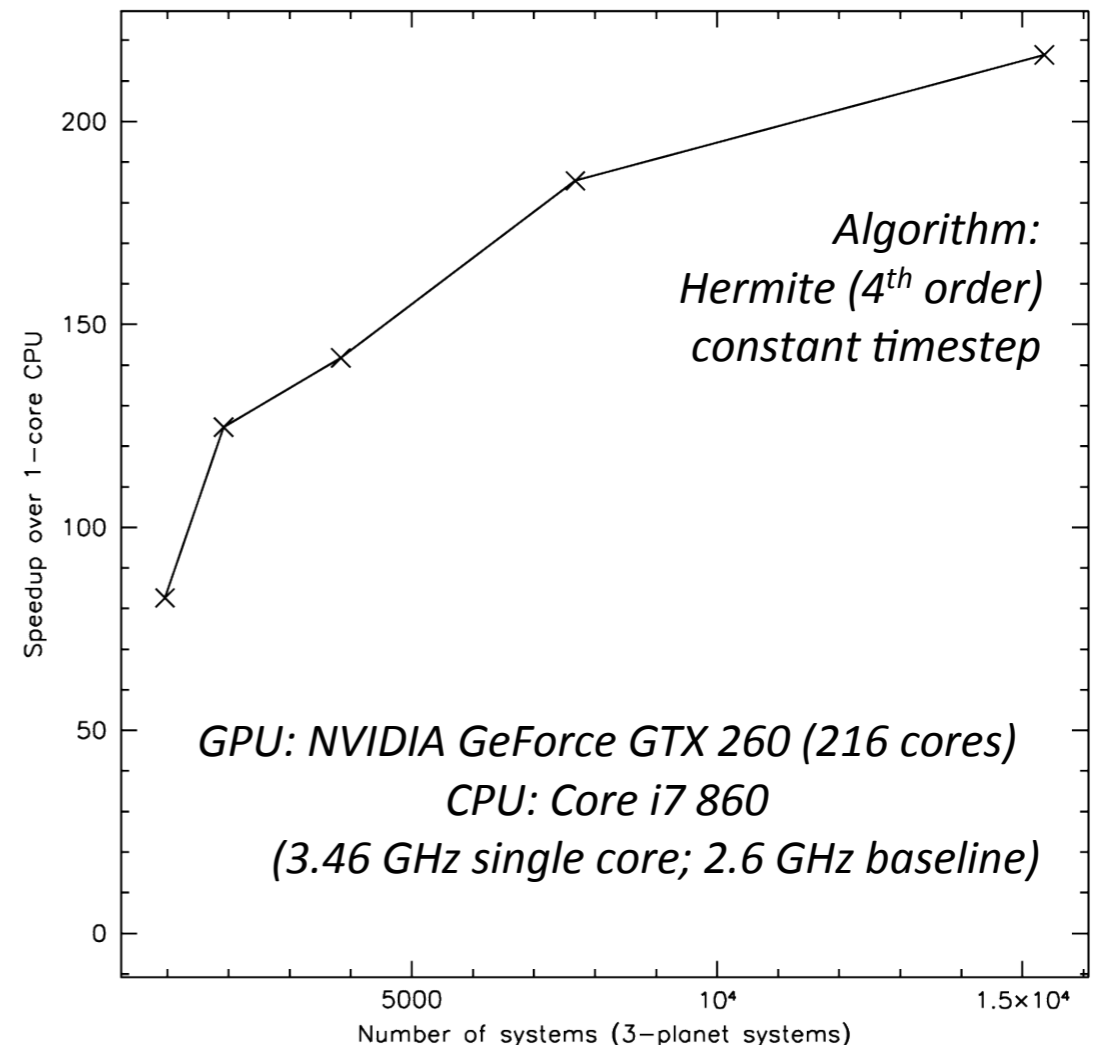 Associate Astronomer, University of Arizona

- Interests:

  - Computing and knowledge
    discovery with large data sets

acquired number of visits: r


Algorithm:
Hermite (4th order)
constant timestep

GPU: NVIDIA GeForce GTX 260 (216 cores)
CPU: Core i7 860
(3.46 GHz single core; 2.6 GHz baseline)

Speedup over 1–core CPU

Number of systems (3–planet systems)

  - Structure of the Milky Way

- Talk: "GPU Accelerated Orbit Computation Codes"

liuchao@nao.cas.cn

- National Astronomical Observatories, CAS, China

- interests:

  - The origin of the Galactic thick disk

  - The mass distribution/structure of the Galactic disk

  - The evolution of the Milky Way

  - The interaction between data and models

- talk: The future kinematical data from LAMOST and Gaia/Data/

lokas@camk.edu.pl

- Associate professor, Copernicus Center, Warsaw

- interests:

  - Tidal stirring of dwarf galaxies

  - Dynamical modelling of dSphs

  - Mergers of dwarfs

- talk: Hints and insights from the simulations of tidal stirring of dwarf galaxies

magog@thphys.ox.ac.uk
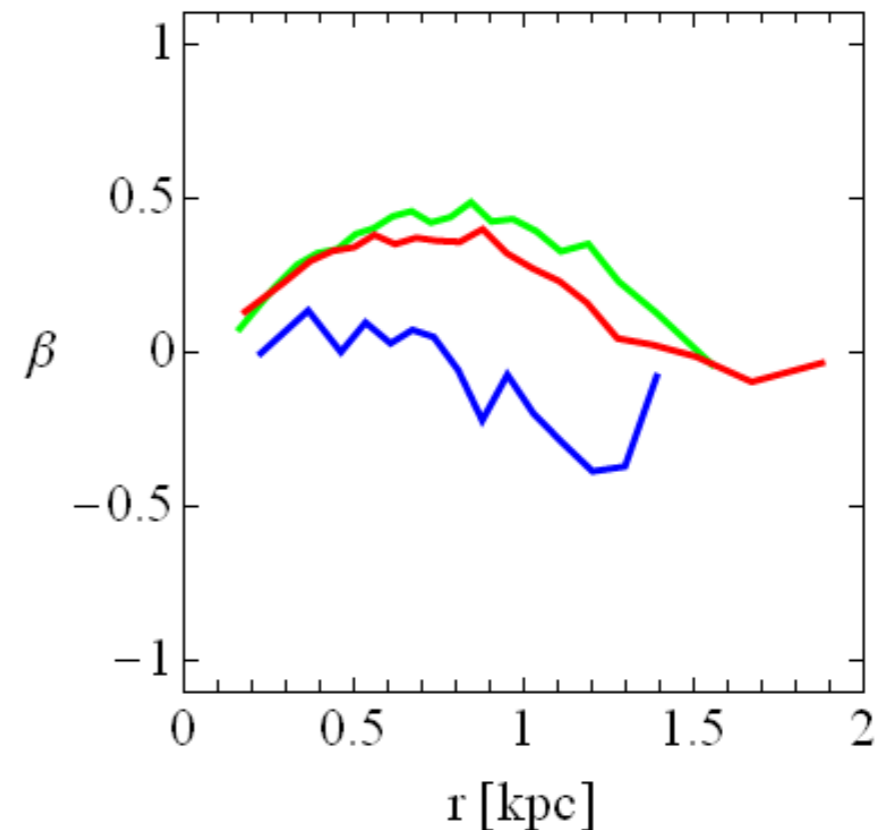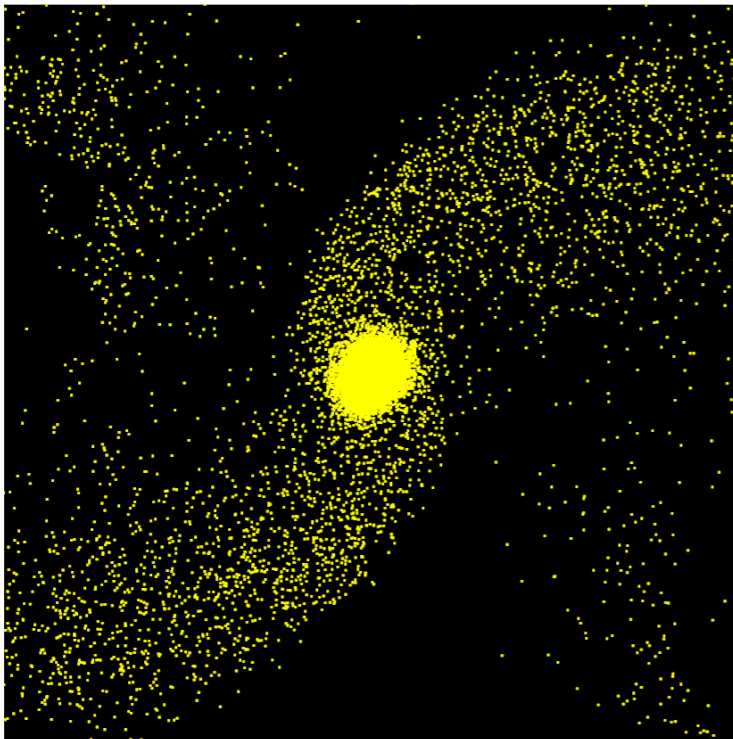
- UL, University of Oxford

- interests:

  - Estimating Phi

  - Galaxy centres

  - Stuff between the stars

- talk: "Lessons from the Galactic centre" (what 6000 PMs can do for you)

nicolas.martin@astro.unistra.fr
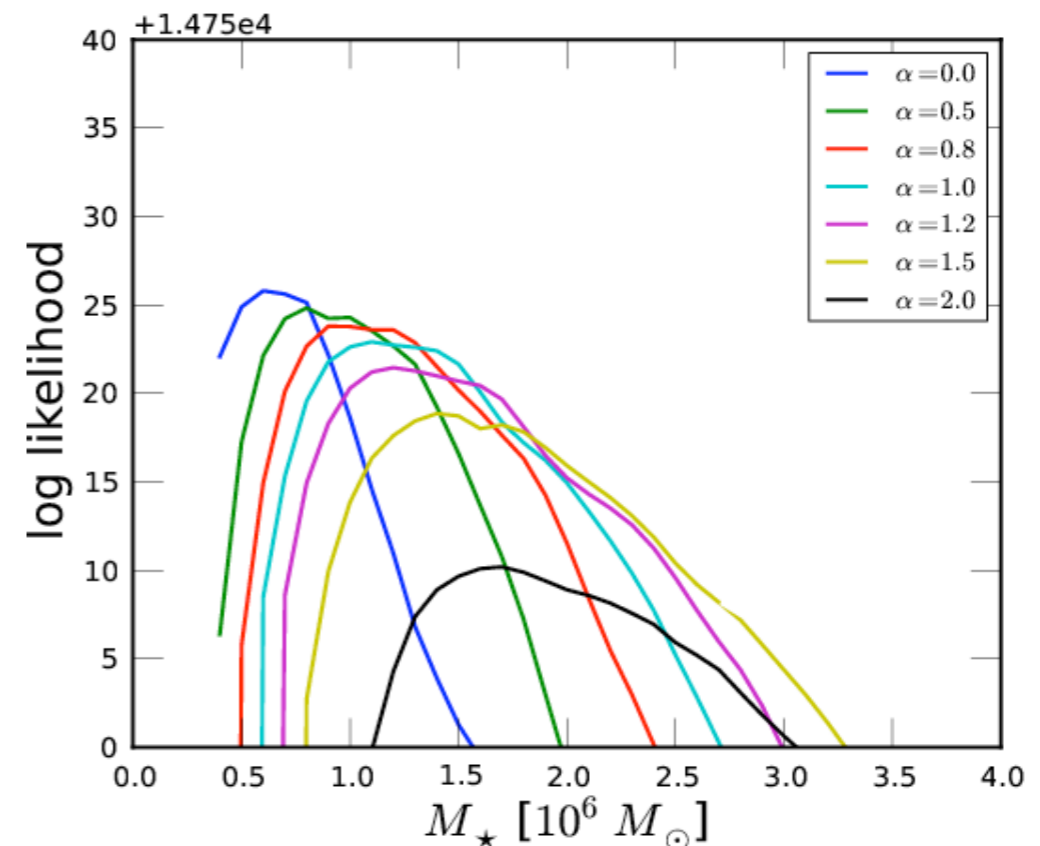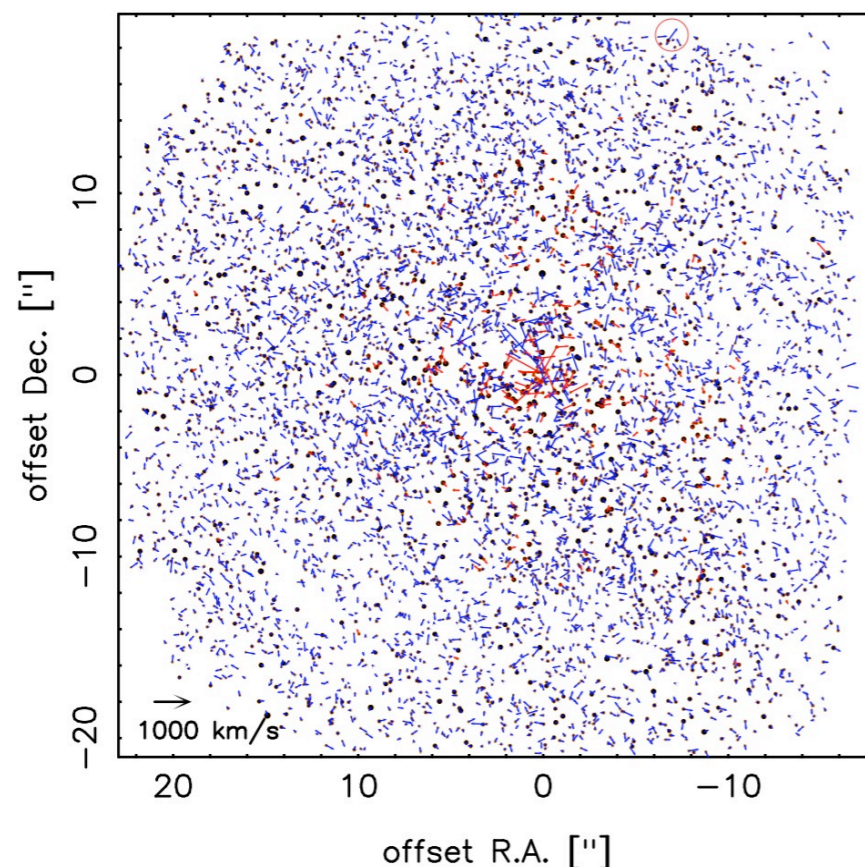
- Tenured CNRS researcher at the Strasbourg Observatory
  & adjunct researcher at the MPIA

- interests: the Local Group as a cosmological probe

  - resolved stellar populations in the Local Group

  - dwarf galaxies (properties, nature, evolution…)

  - stellar halos

- "Beware your tracers — Musings from the PAndAS view of the M31 satellite system" [a talk without kinematics or modeling at a dynamics workshop]
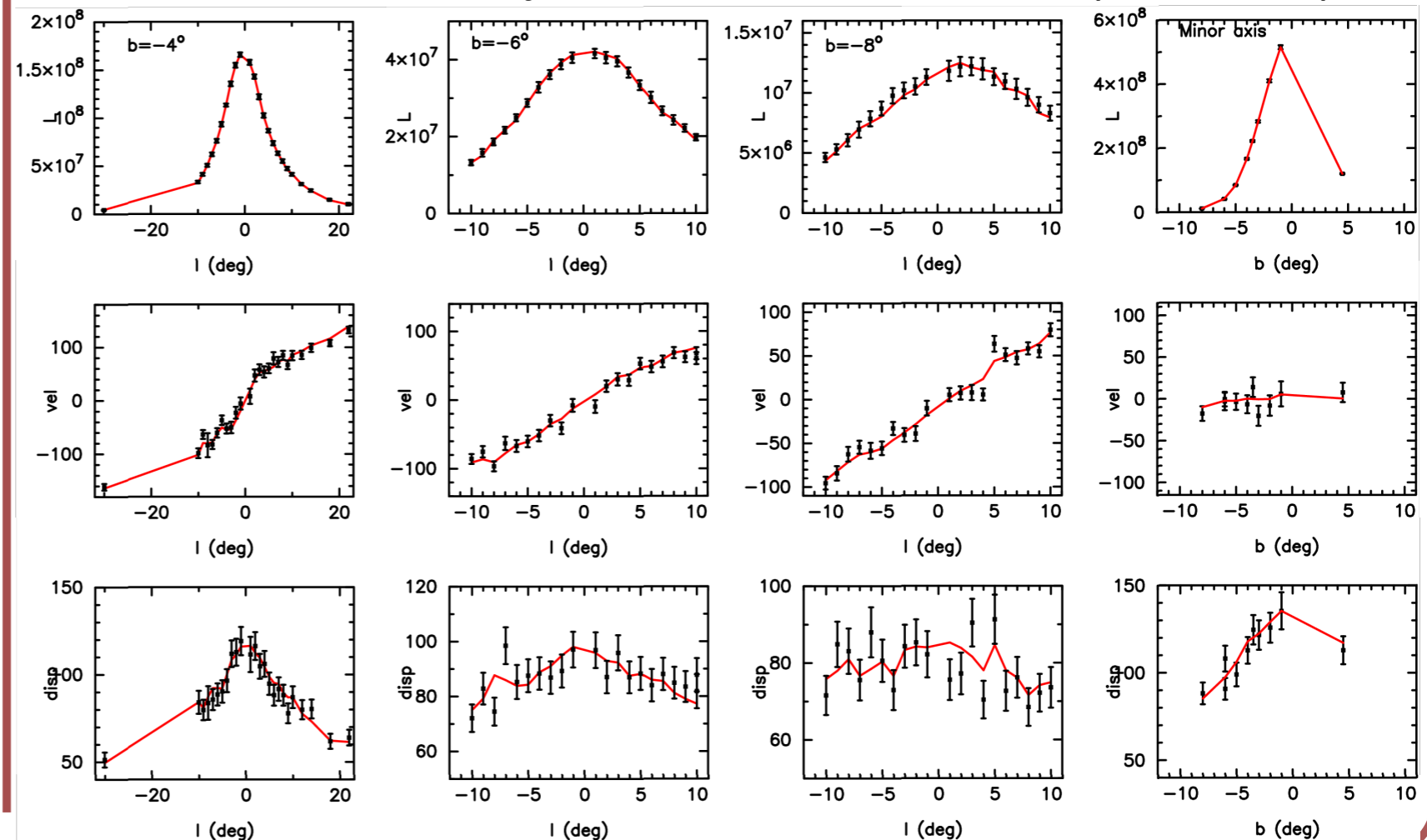
imv@mpe.mpg.de

Inma Martinez-Valpuesta

- Postdoc at Max-Planck Institute for Extraterrestrial Physics

- Interests:
  - *Dynamics of galaxies*
 - *Barred galaxies*
  - *Milky Way*

- My talk: M2M/N-body methods


**N-body** *simulation of a barred galaxy.*
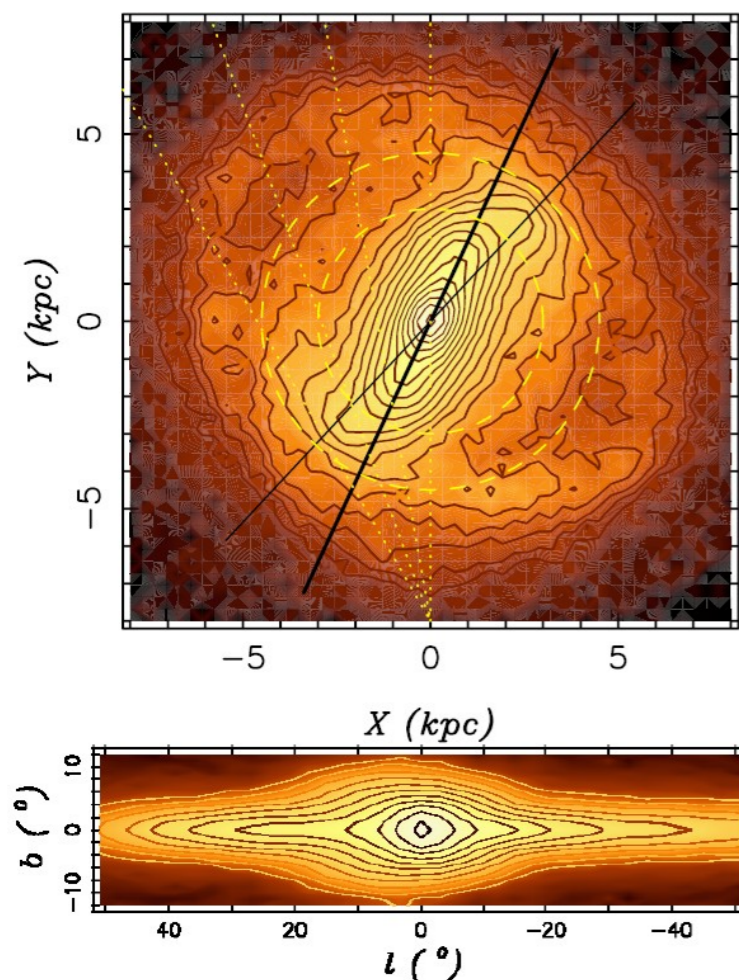
M2M-NMAGIC *Nbody model for the MW kinematics (BRAVA data)*

Paul McMillan

- Postdoc at Oxford University

- Interests:

    - Dynamical modelling – primarily the disc

    - Torus models – use of angle-action variables

    - Projecting models into observable space

- talk: Torus modelling – what is it and what are the advantages?

>

morganti@mpe.mpg.de

Lucia Morganti
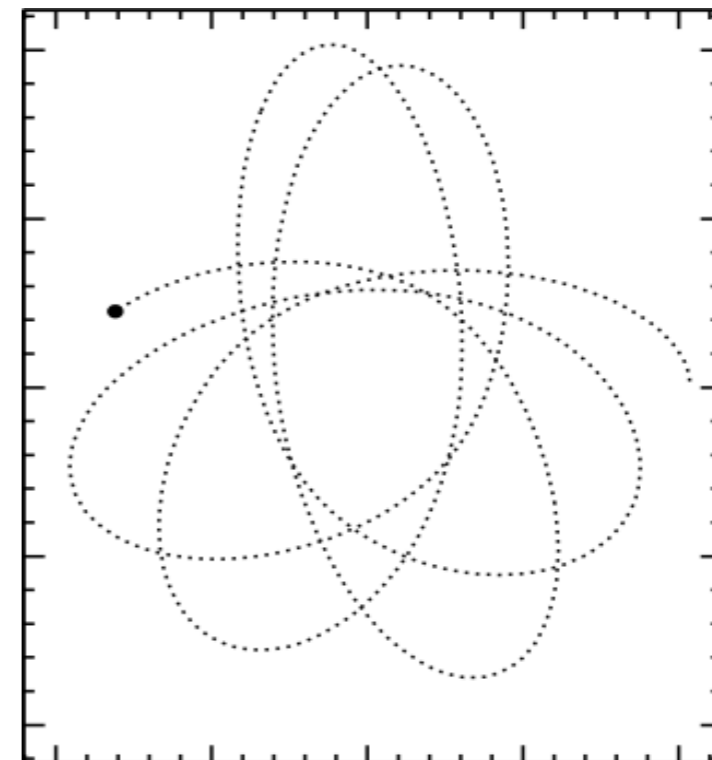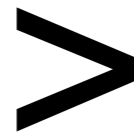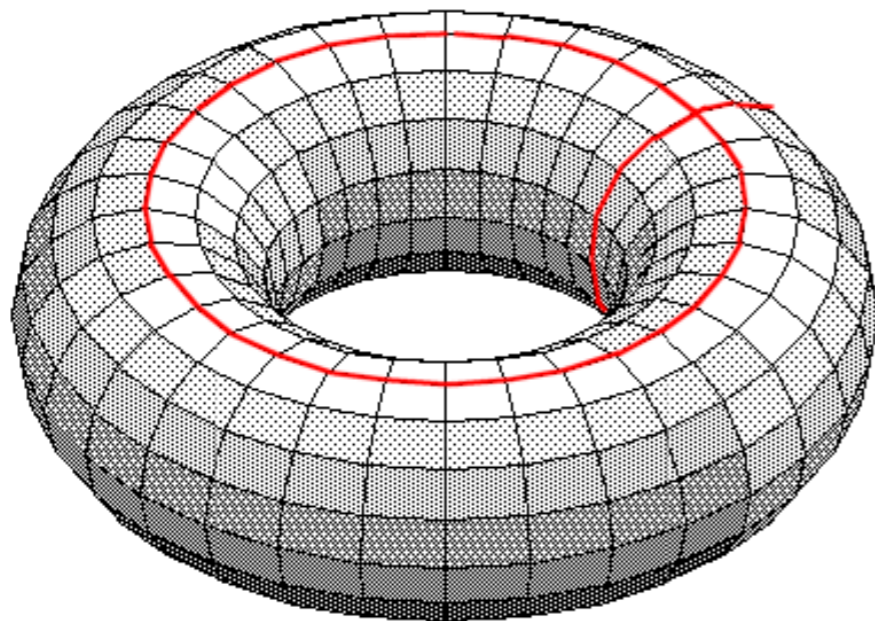
- PhD student at Max Planck Institut für extraterrestrische Physik

- interests:

  - Dynamics of galaxies

  - Dark matter halos of ellipticals

  - Made-to-measure particle models

- Talk: *Parameter estimation with NMAGIC particle models and the dark matter halo of the intermediate luminosity elliptical galaxy NGC 4494*

nardin@ari.uni-heidelberg.de
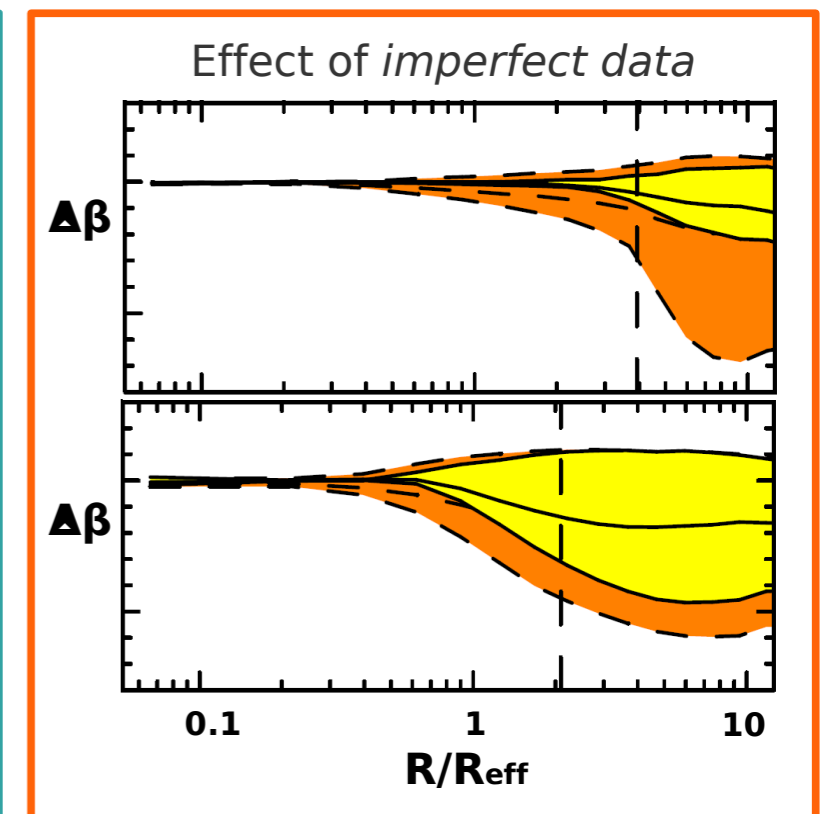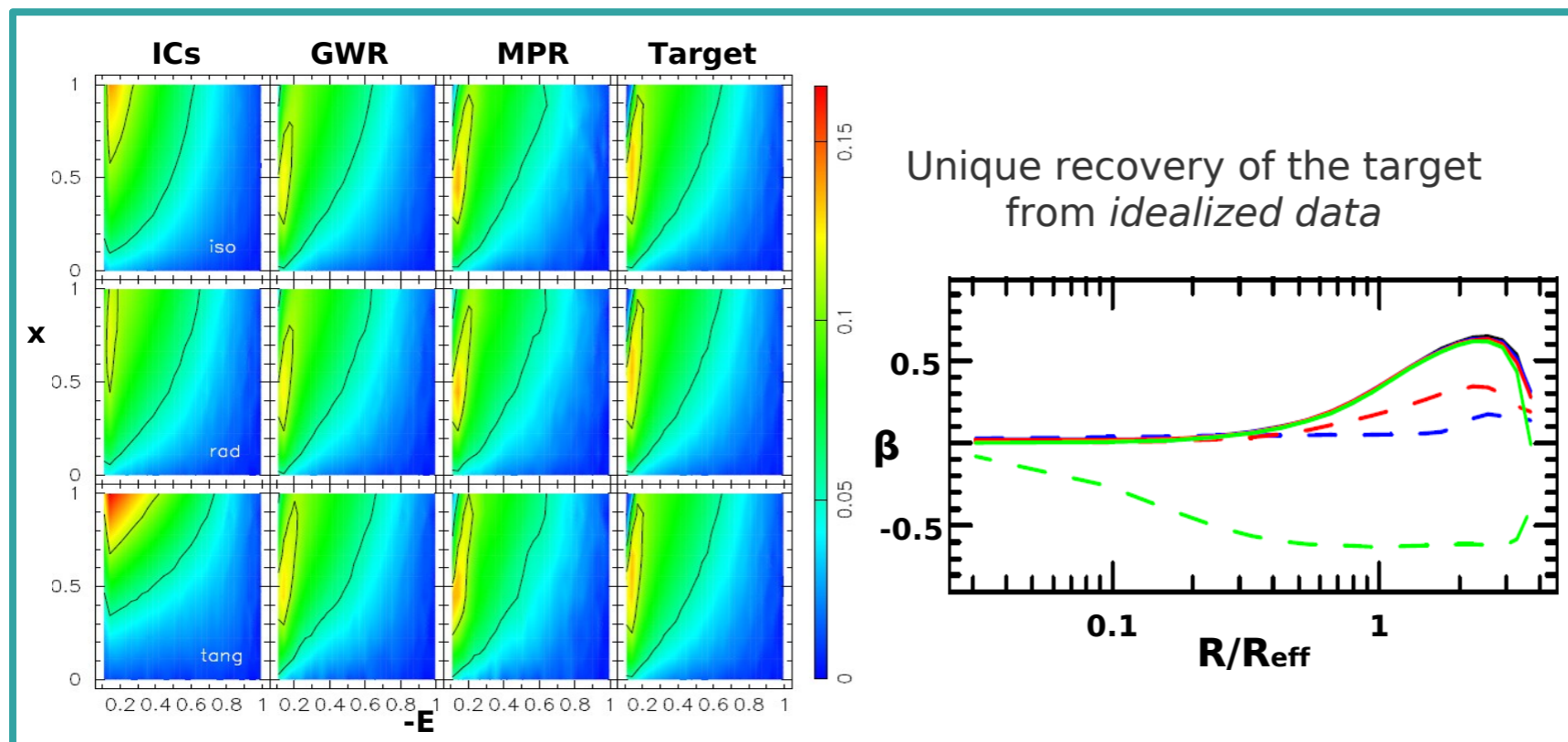
- PhD student at ARI / stellar dynamics group with Andreas Just

- interests:

    - Angle-action variables

    - Approximation of the third integral

    - Phase-space distribution functions

    - Vertical gravitational potential

mkness@mso.anu.edu.au

- PhD student at the Australian National University with Ken Freeman
- Interests:
  - The Galactic bulge
  - The Galactic thin and thick disks
  - The formation of the Milky Way

- Presenting: For the MW bulge: can models help interpret/explain the following:
 - split in red clump seen in [Fe/H] > -0.7 stars
  - rotation as a function of [Fe/H]
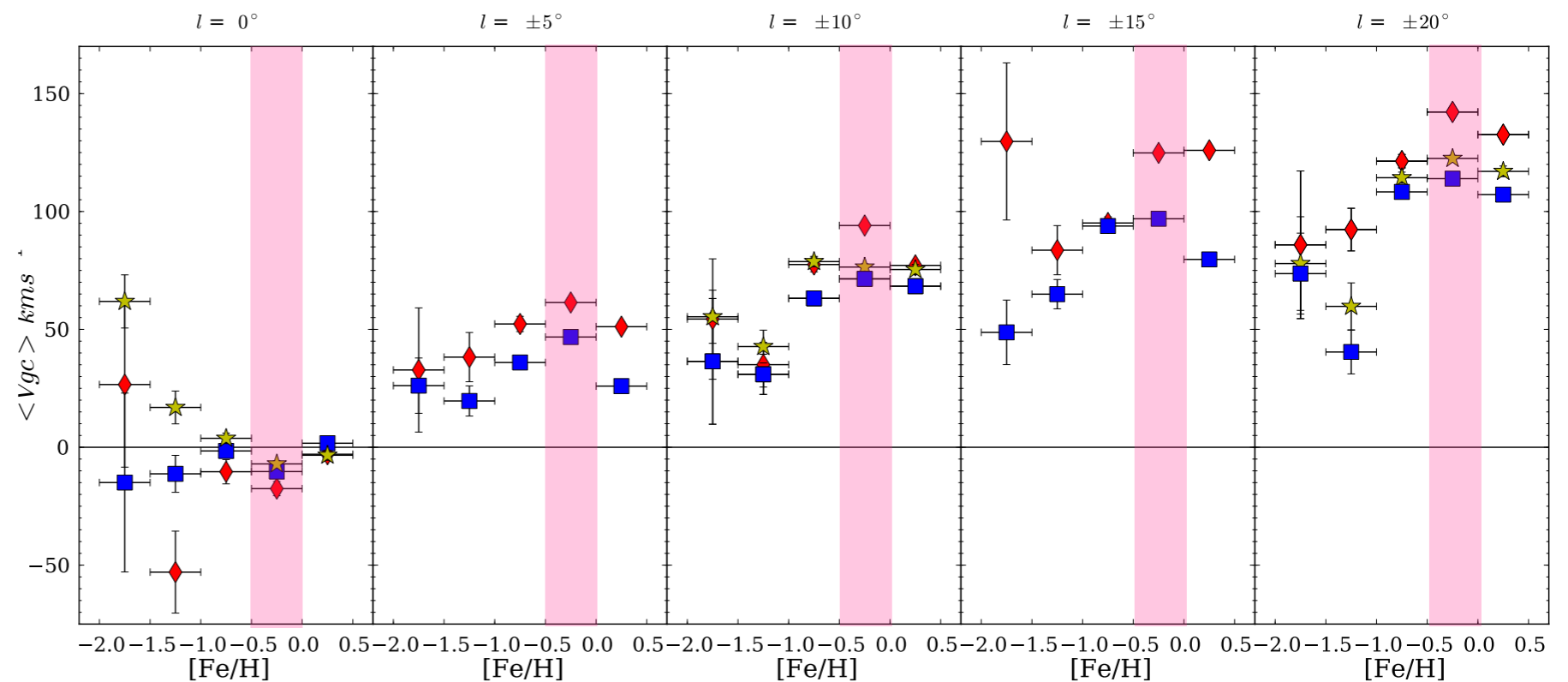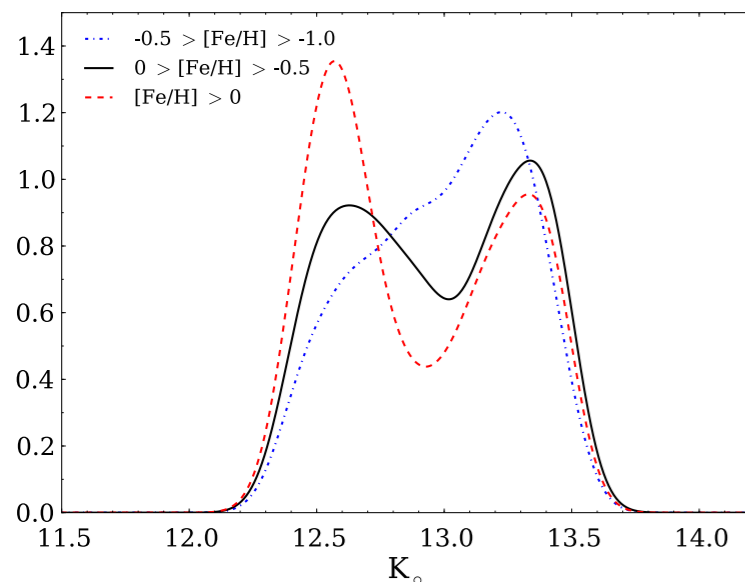
David Nidever

dnidever@virginia.edu

- APOGEE postdoc at University of Virginia / Majewski group

- interests:

  - origin and size of Magellanic Stream / stellar halos of Magellanic Clouds

  - Galactic bulge kinematics

  - stellar streams in MW and Magellanic Clouds

- talk: exploring the Galactic bulge/bar with APOGEE and APOGEE-South
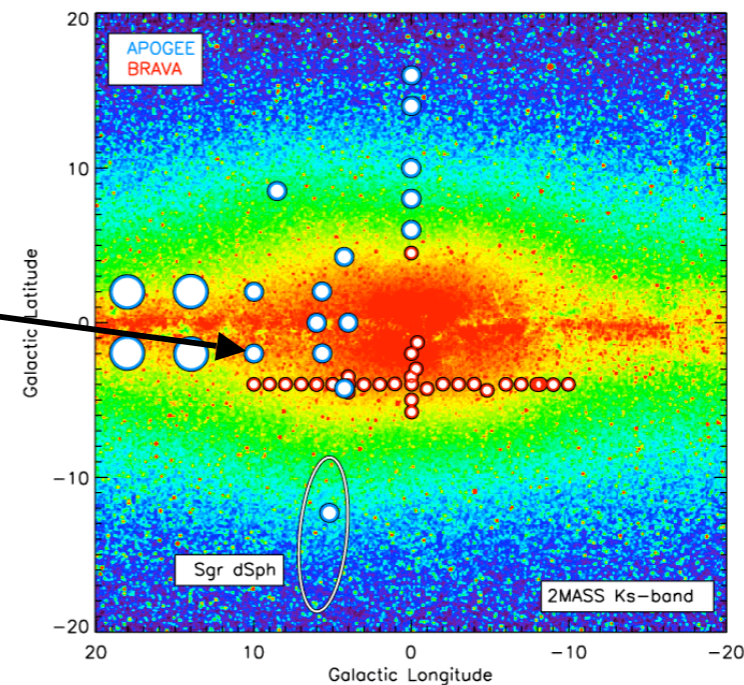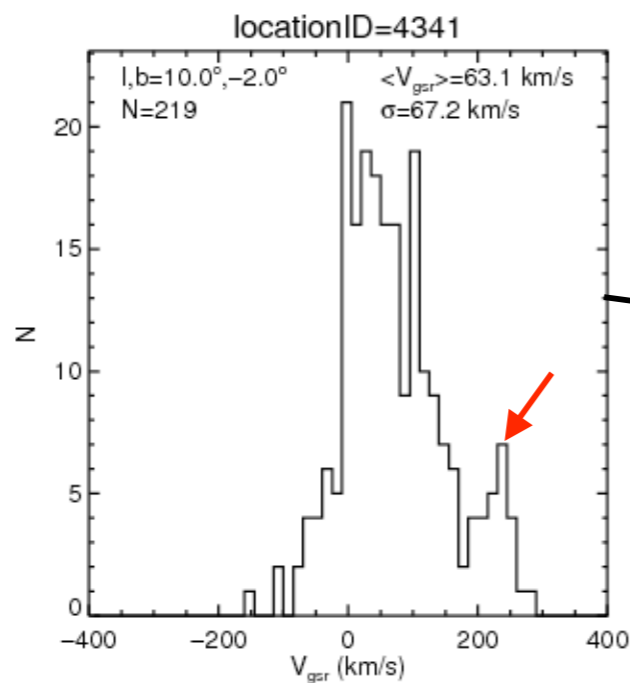
- Ramón y Cajal Fellow, IAA-CSIC, Spain

- interests:

    - Dark Matter in the Milky Way
    - Hierarchical formation of galaxies
    - Statistical + Dynamical models

- talk: "Measuring the MW potential without dynamical models"
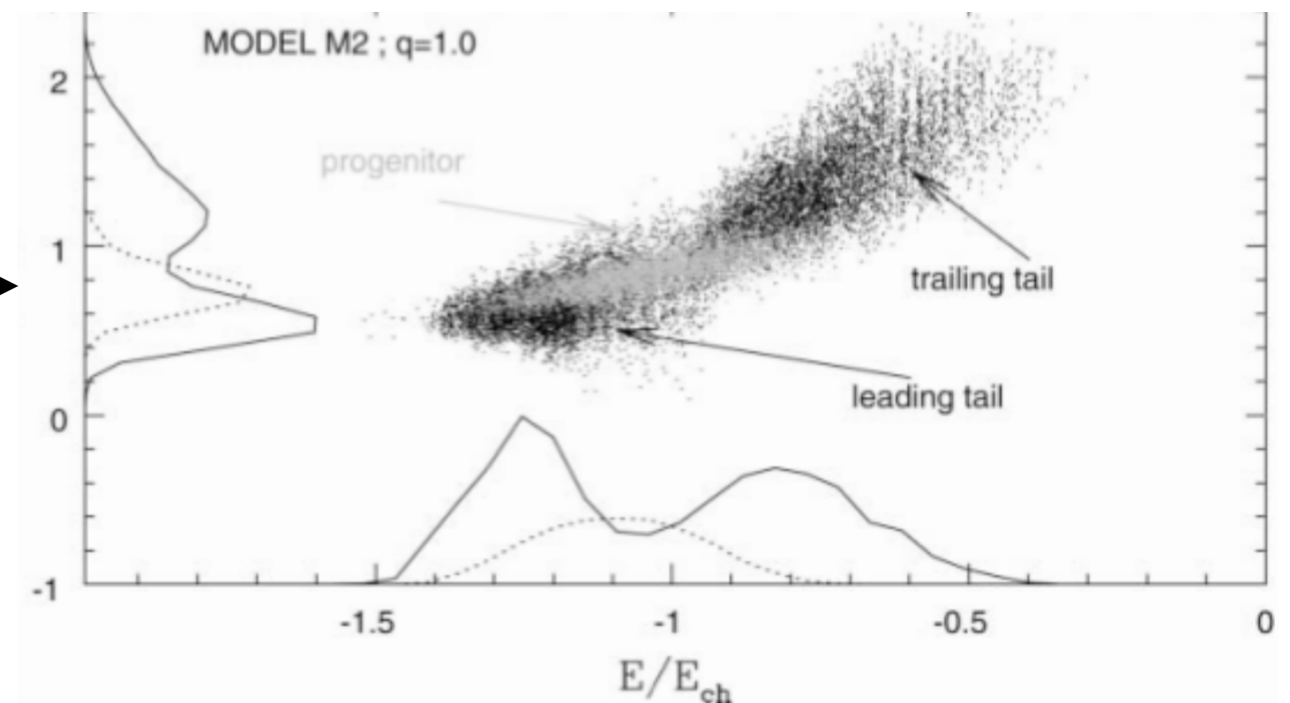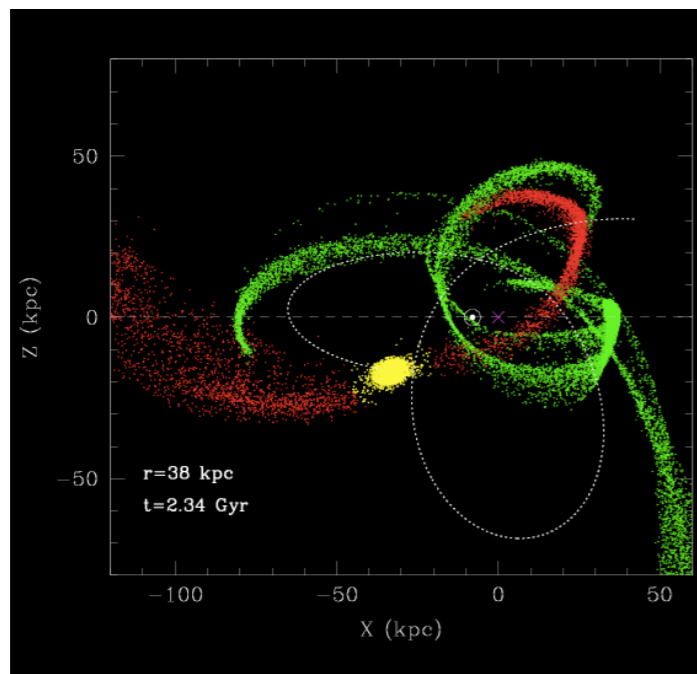
Hans-Walter Rix   Business Card
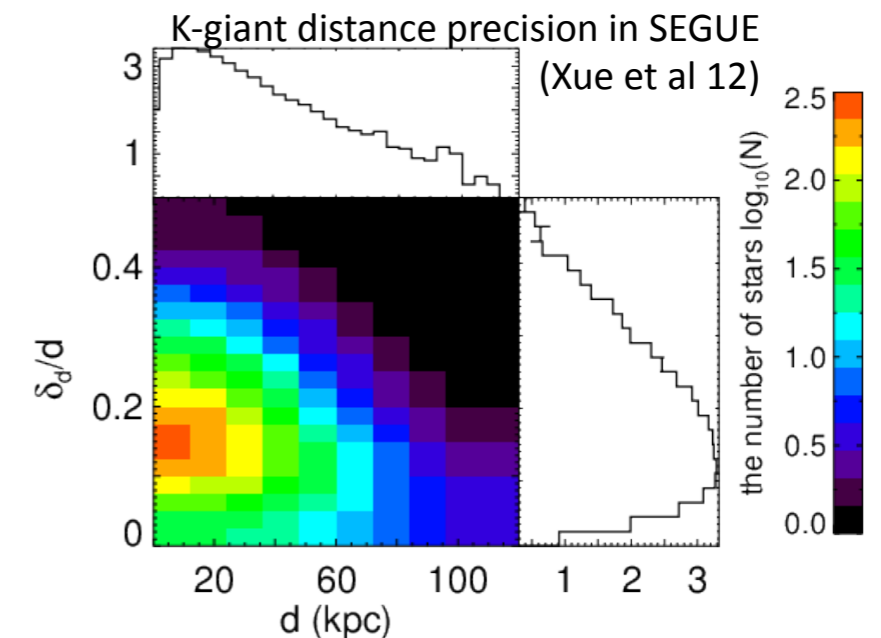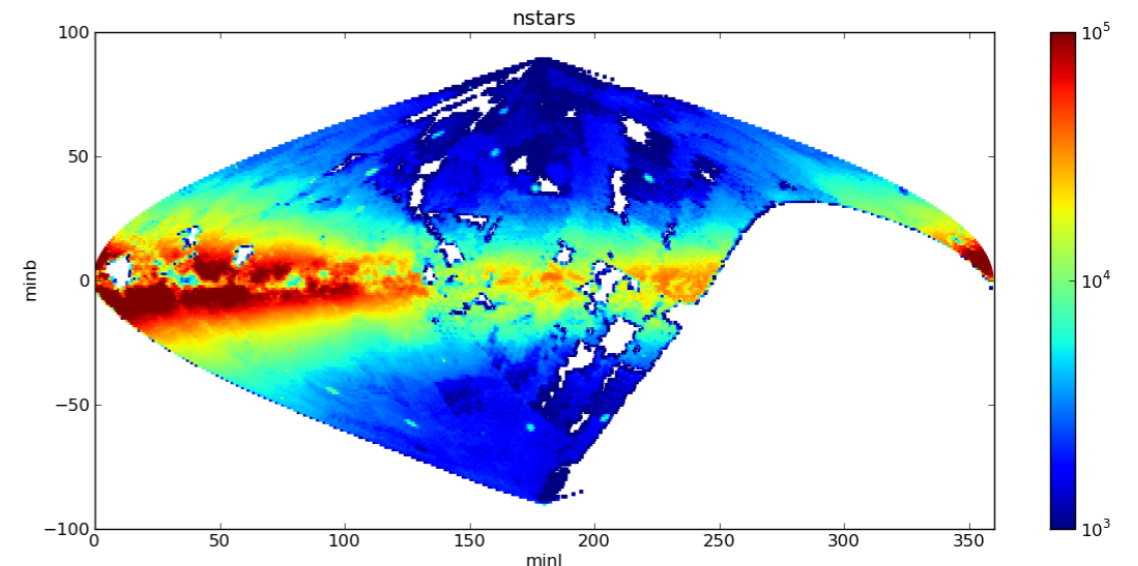MPI for Astronomy, Heidelberg

Main-Sequence stars in PanSTARRS1 (Morganson et al 12)

Select science Interests:

• galaxies *by any means necessary*

• Milky Way system as cosmological testbed
    • Is there a lower limit to galaxy formation?
    • What shapes (stellar) disks?

• high-z – local connection
• respectful treatment of data's information content

K-giant distance precision in SEGUE
(Xue et al 12)

Current projects/practical expertise:
• Exploiting:
    • PS1 Milky Way project: data now in place
    • SEGUE I&II spectroscopy
• (Re-)constructing the Milky Way's disk
• Linking discrete spectroscopic & photometric with
    dynamical modeling
• Probabilistic framework for data interpretation

K-giant distance bias when ignoring priors
(Xue et al 12)

Aaron Romanowsky

romanow@ucolick.org
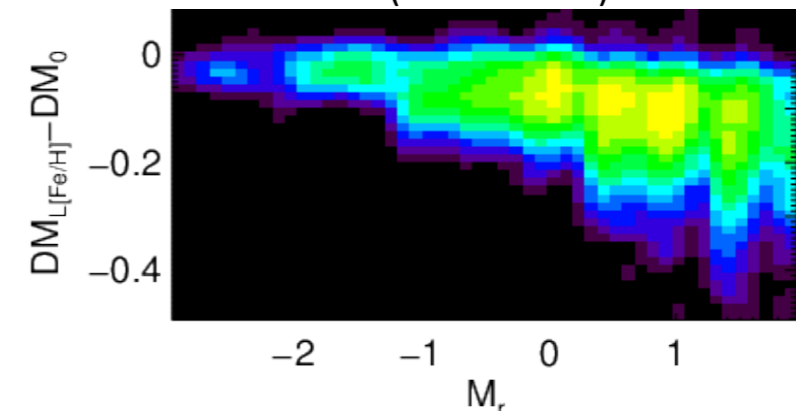
- Researcher, University of California Observatories, Santa Cruz

- interests:

  - Dark Matter and Dynamics in Early-type Galaxies

  - Extragalactic Halo Substructures

  - Connecting Observations and Cosmological Simulations

- talk: Recovering Substructure

Dynamics meets kinematic tracers, Ringberg, 10-14 April 2012
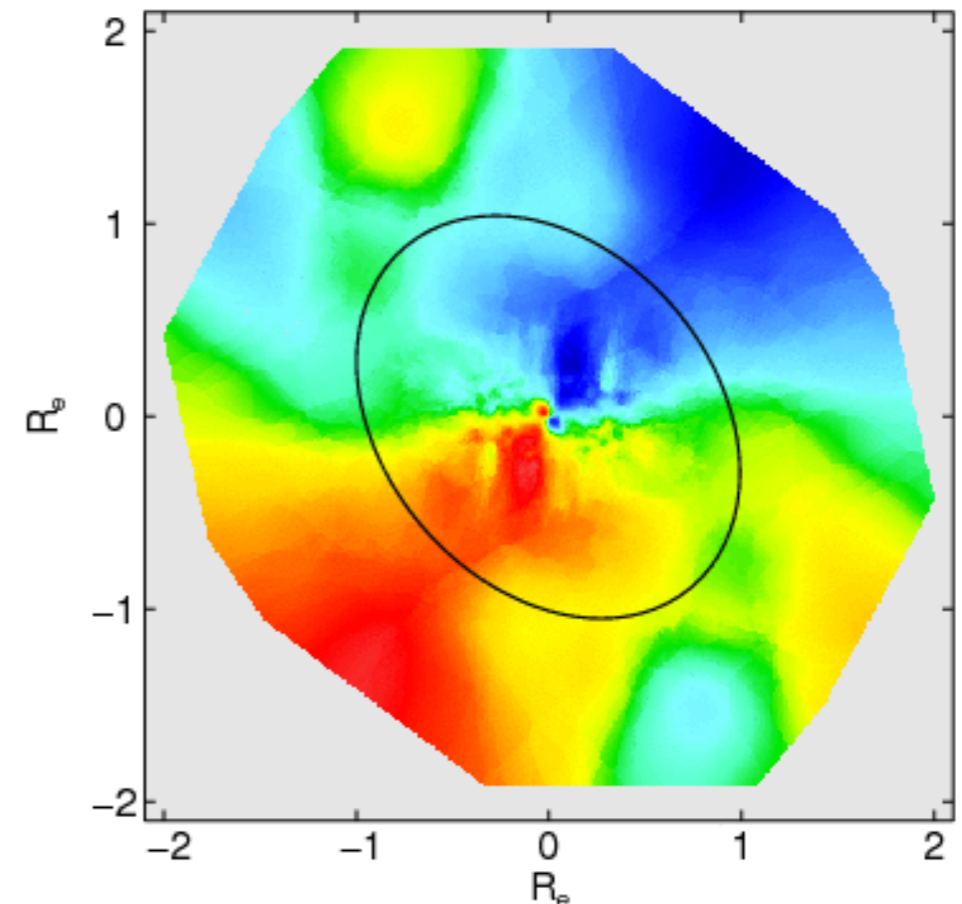
REMCO VAN DEN BOSCH

- Triaxial Orbit-Based Dynamical Models

- HETMGS survey of 900 nearby galaxies

- Super-Massive Black Holes
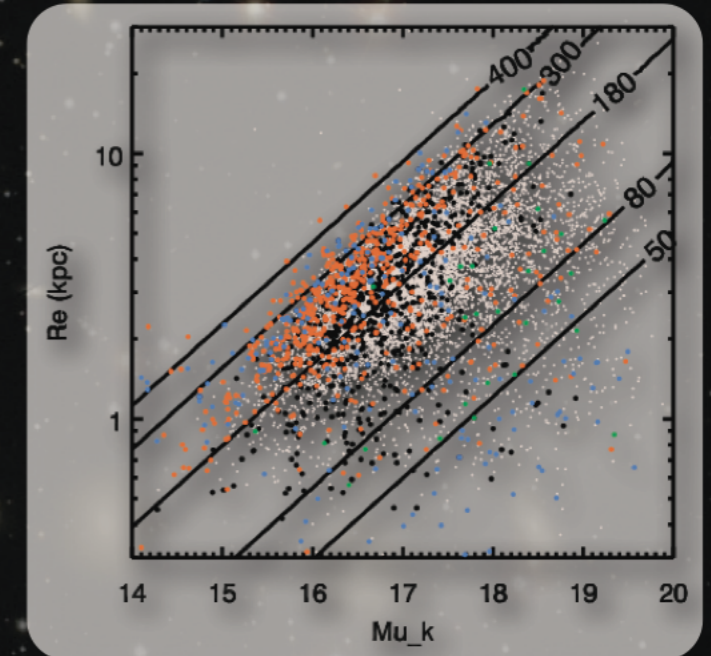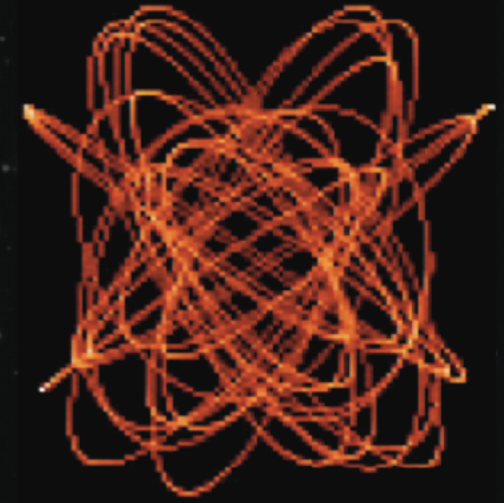
- research group leader at MPIA, Heidelberg

- research interests:

  - dynamical structure and evolution of stellar systems ...

  - ... extragalactic galaxies using integral-field spectroscopy

  - ... Local Group using resolved velocities and chemical properties

- talk: Overview of Dynamical Modeling

SEGUE G-dwarfs 7<R<9 kpc   radial migration?   early-on gas-rich merger?
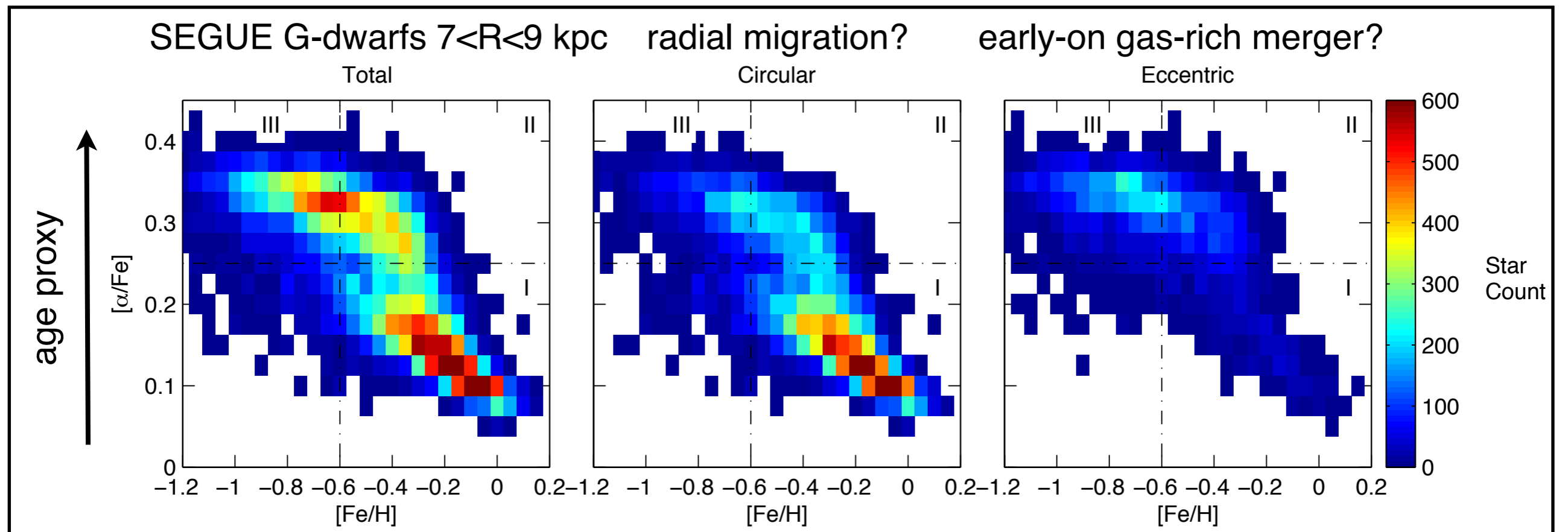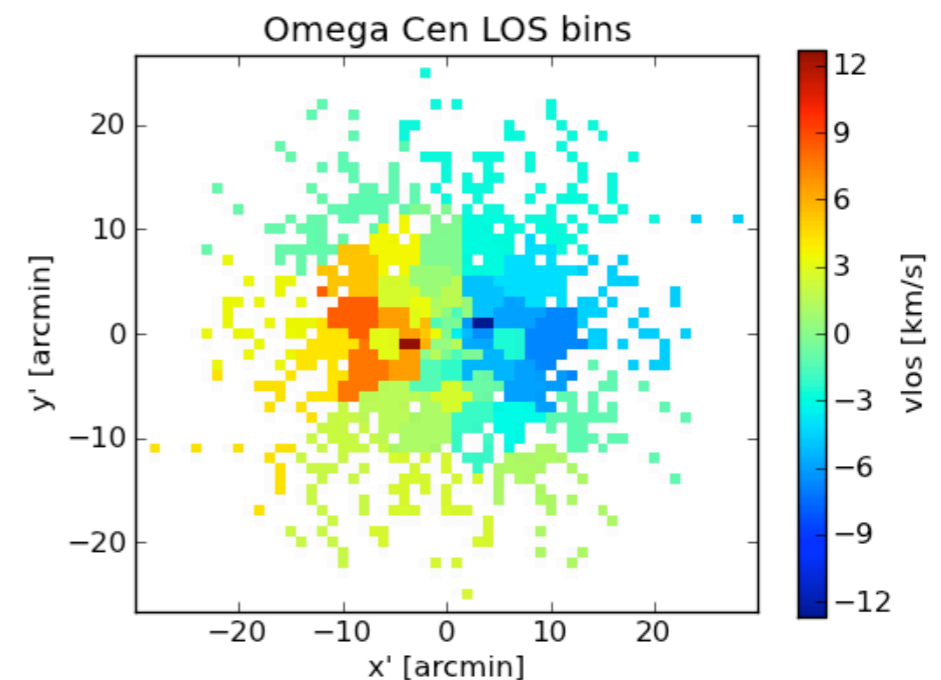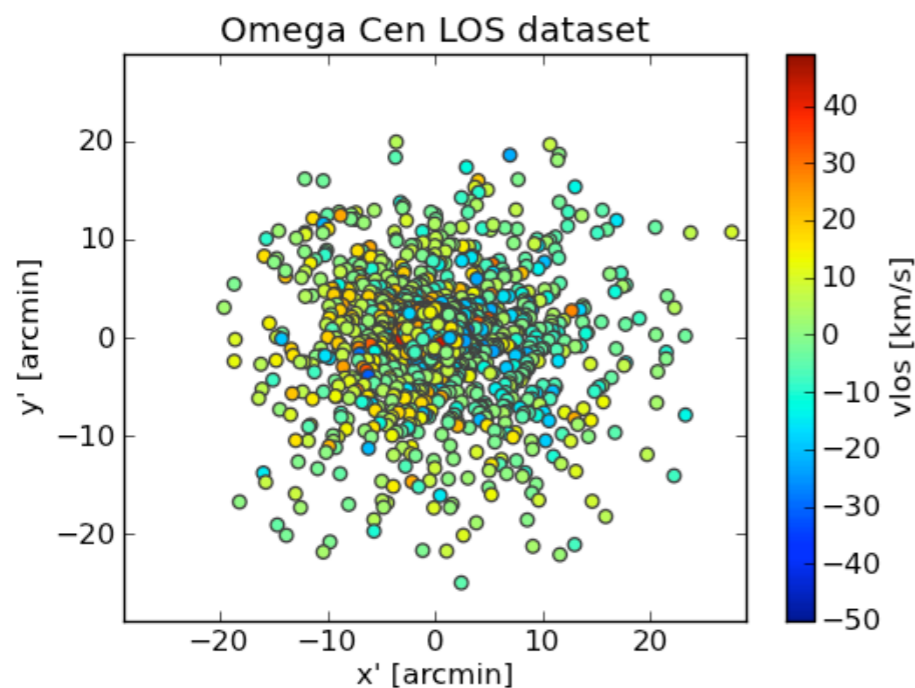
Liu & van de Ven (2012)

- Hubble Fellow, Harvard/CfA

- interests:

  - epistemology

  - galaxies, dynamics

  - phenomenology of dark matter

- talk: Radial Velocity Data for Milky Way Dwarfs

- slideshow: Direct empirical constraints on slopes of mass profiles

Laura Watkins
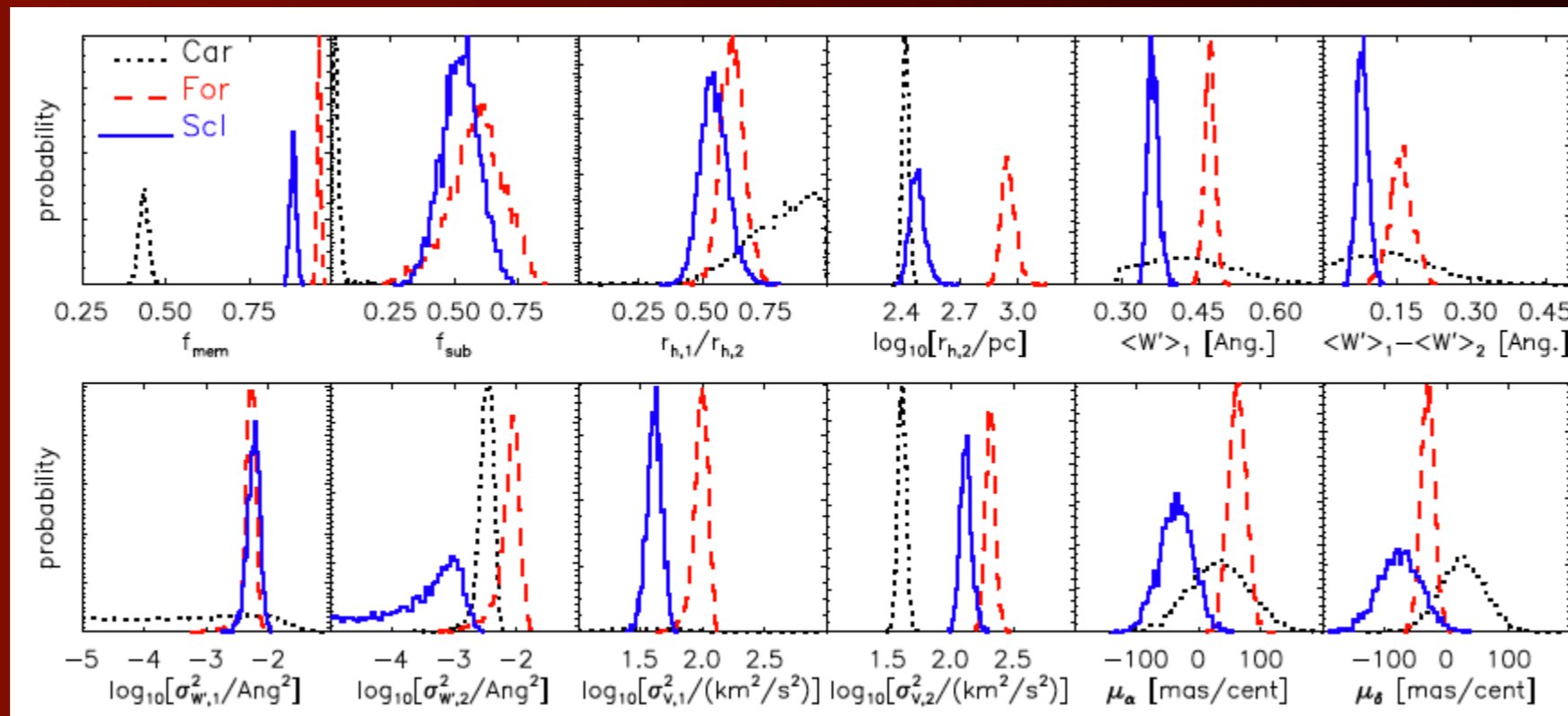
✳ postdoc at the MPIA / dynamics group with Glenn van de Ven

✳ interests:

    ✳ internal dynamics of low-mass stellar systems (GCs and dSphs)

    ✳ kinematics of satellite populations

    ✳ remnants of satellite disruption

✳ talk: Making the best of the data - discrete dynamical modelling of Omega Centauri