

Floor van Donkelaar

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Citizenship: The Netherlands

Affiliation: University of Zurich

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Research interests

Computational Astrophysics, Galaxy Formation, Galaxy Evolution

Education

University of Zurich

PhD in Computational Astrophysics

Supervisor: Prof. Dr. Lucio Mayer

Zurich, Switzerland

Sep 2021 – Present

Lund University

MSc in Astrophysics

Supervisor: Prof. Dr. Oscar Agertz

Lund, Sweden

Aug 2019 – May 2021

GPA: 3.83/4

University of Twente (ATLAS)

BSc in physics, minor in modern physics

Mentor: Prof. Dr. Jennifer L. Herek

Enschede, The Netherlands

Sep 2016 – Jul 2019

GPA: 3.85/4

Research experience

University of Zurich

Supervisor: Prof. Dr. Lucio Mayer

Jan 2022 – Present

Research on the formation of disc galaxies investigating the gasue halos with PHOEBOS to be used in combination with observations of SKA.

Research on the formation of the thin and thick disc with GIGAERIS, a cosmological, N-body hydrodynamical “zoom-in” simulation of the formation of a Milky Way-sized galaxy.

Lund University (MSc Thesis)

Supervisor: Prof. Dr. Oscar Agertz

Feb 2020 – Sep 2021

Research on the difference between the velocity dispersion of stars in the Milky Way in comparison to gas-rich high redshift galaxies with the use of N-body hydrodynamical simulations. Thesis available *here*.

Oxford University

Supervisor: Dr. Kearn Grisdale

Jun 2020 – Nov 2020

Analyzing gas and stellar properties of Giant Molecular Cloud in Large Magellanic Clouds with the use of hydrodynamical simulations.

Leinbzin-Institut für Astrophysik Potsdam (BSc Thesis)

Supervisor: Dr. Kasper Borello Schmidt

Mar 2019 – Jun 2019

Understanding the star formation rate, metallicity and thermal pressure in galaxies around $z = 0.4$ with the use of spectral data.

Leinbzin-Institut für Astrophysik Potsdam

Supervisor: Dr. Kasper Borello Schmidt

Jul 2017

Generating template spectra of MUSE-Wide emission lines sources.

Teaching experience & public outreach

Teaching assistant, University of Zurich

AST 295: Astrobiology proseminar

Fall 2022

AST 202: The Universe: Contents, Origin, Evolution and Future

Spring 2022

AST 201: Introduction to Astrobiology

Fall 2021

Chief Public Relations, Green Team Twente

Jun 2017 – Sep 2018

Student team working on one of the most efficient hydrogen city cars in world. As head of the public relations and graphic designer of the team, it was my main responsibility to decide about the appearance of the team and organize the main events.

Workshop developer, University of Twente

May 2017 – Jun 2018

We supported and developed workshops about mentoring and the writing of personal development plans in the science track of the honours programme.

Talks & tutorials

Stellar Systems at $z > 4$: Proto-GCs Properties & the Imposter

Oct 2022

Talk at the Swiss SKA days 2022

High- z disk formation and Globular Cluster analogs in the ultra-high resolution GigaERIS simulation

August 2022

Talk at the ISSI meeting, together with Lucio Mayer

On disc kinematics: The influence of the thin disc on star clusters

March 2022

Talk at the Winter Aspen Conference: Globular Clusters

The Properties and Scaling Relations of GMCs in the LMC

Sep 2020

Talk at the extragalactic simulation group of Oxford University

Publications

Stellar cluster formation in a Milky Way-sized galaxy at $z \sim 4$ - I. The proto-globular cluster population and the imposter amongst us

Floor van Donkelaar, Lucio Mayer, Pedro R. Capelo, Tomas Tamfal, Thomas R. Quinn and Piero Madau

Submitted to MNRAS (October 2022)

From giant clumps to clouds - II. The emergence of thick disc kinematics from the conditions of star formation in high redshift gas rich galaxies

Floor van Donkelaar, Oscar Agertz and Florent Renaud.

MNRAS (March 2022)

Skills

Programming

Python | MATLAB | SQL | C | C++

Languages

Dutch (Native) | English (Fluent) | German (Elementary) | Swedish (Elementary)

Other

LaTeX | Windows OS | Linux OS | Microsoft Office Package | Adobe Package

Organizations

UCT Alumni Association

Sep 2021 – Aug 2022

Chair & PR representative

Faculty Council EEMCS
Elected member

Sep 2017 – Aug 2018

Other interests

Public Relations, Graphic Design & Rugby