Eric Rohr (he/him)

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Reserach Interests and Keywords

- galaxy formation and evolution, cosmic baryon cycle, multiphase gas
- galaxy clusters, the intracluster medium, circumgalactic medium
- galaxy environments, ram pressure stripping, jellyfish galaxies
- star-formation, stellar feedvack, supermassive black hole formation, growth, and feedback
- numerical methods, cosmological hydrodynamic simulations, idealized galaxy simulations

Education

Ph.D. Astronomy; Universität Heidelberg — Oct 2020-Nov 2024

Jellyfish Galaxies and the Multiphase Nature of Gas Around Galaxies. Advisor: Dr. Annalisa Pilleich.

B.Sc. Astronomy-Physics; University of Virginia — Aug 2016-May 2020

Why We Should Kerr About the Dark Secrets of Relativistic Accretion Disks in Athena++. Advisor: Prof. Shane Davis.

Academic Appointments and Research Experience

Postdoctoral Fellow — June 2025-Present

Max Planck Institut für Astrophysik. Advisor: Volker Springel. Project: *The Effects of the Multiphase Halo Gas on Galaxy Evolution.*

Postdoctoral Researcher — Dec 2024-May 2025

Max Planck Institut für Astronomie and STRUCTURES Cluster of Excellence. Advisor: Annalisa Pillepich. Project: *Zooming into the Tails of Jellyfish Galaxies.*

Ph.D. Student and IMPRS-HD Fellow — Oct 2020-Nov 2024

Max Planck Institut für Astronomie. Advisor: Dr. Annalisa Pillepich. Thesis title: *Jellyfish Galaxies and the Multiphase Nature of Gas Around Galaxies.*

Undergraduate Research Assistant — May 2019-July 2020

University of Virginia. Advisor: Prof. Shane Davis. Project: *Why We Should Kerr About the Dark Secretes of Relativistic Accretion Disks in Athena++.*

VSGC Undergraduate Research Scholar — Aug 2018-May 2019

University of Virginia as part of the Virginia Space Grant Consortium, funded by NASA. Advisor: Prof. Mark Whittle. Project: *HST STIS Observations of the Central Radio/X-ray Source in the Compact Starburst Galaxy Henize 2-10.*

ThinkSwiss Research Scholar — May 2018-Aug 2018

Universität Zürich. Advisor: Prof. Robert Feldmann. Project: *Describing the Galaxy Size-Halo Size Relation at Cosmic Noon in FIREbox.*

Publications

A current list of all publications can be found on ads or ORCID.

As a first author:

4. Rohr, E., Pillepich, A., Nelson, D., et al. (2025): "The cooler past of the intracluster medium in TNG-Cluster". MNRAS, 536, 1226.
3. Rohr, E., Pillepich, A., Nelson D. et al. (2024): "The hot circumgalactic media of massive cluster satellites in the TNG-Cluster simulation: existence and detectability". A&A, 686, A86.
2. Rohr, E., Pillepich, A., Nelson D. et al. (2023): "Jellyfish galaxies with the IllustrisTNG simulations - when, where, and for how long does ram pressure stripping of cold gas occur?". MNRAS, 524, 3502.
1. Rohr, E., Feldmann, R., Bullock, J. et al. (2022): "The galaxy-halo size relation of low-mass galaxies in FIRE". MNRAS, 510, 3967.

As a contributing author:

6. Staffehl, M., Nelson, D., Ayromlou, M. et al. incl. Rohr, E. (2025): "The abundance and origin of cool gas in galaxy clusters in the TNG-Cluster simulation". arXiv:2503.01960.
5. Ayromlou, M., Nelson, D., Pillepich A. et al. incl. Rohr, E. (2024): "An Atlas of Gas Motions in the TNG-Cluster Simulation: from Cluster Cores to the Outskirts". A&A, 690, A20.
4. Lehle, K., Nelson D., Pillepich A. et al. incl. Rohr, E. (2024): "The heart of galaxy clusters: demographics and physical properties of cool-core and non-cool-core halos in the TNG-Cluster simulation". A&A, 687, A129.
3. Nelson, D., Pillpeich, A., Ayromlou M. et al. incl. Rohr, E. (2024). "Introducing the TNG-Cluster Simulation: overview and physical properties of the gaseous intracluster medium". A&A, 686, A157.
2. Zinger, E., Pillepich, A., Joshi, G. et al. incl. Rohr, E. (2024): "Jellyfish galaxies with the IllustrisTNG simulations - citizen-science results towards large distances, low-mass hosts, and high redshifts". MNRAS, 527, 8257.
1. Göller, J., Joshi, G., Rohr, E. et al. (2023): "Jellyfish galaxies with the IllustrisTNG simulations - No enhanced population-wide star formation according to TNG50". MNRAS, 525, 3551.

Conferences, Talks, and Seminars

Given 30 talks among invited, contributed, and seminars over the past five years. Highlights:

- **Invited Seminar** Argelander Institute for Astronomy: "Origin and Fate of Cool Gas in and around Galaxy Clusters". Bonn, Germany. May 2025.
- **Invited Talk** *Resolving the Circumgalactic Medium and Its Impact on Galaxy Evolution* conference: "Satellite Signatures in the Multiphase Halo Gas with the IllustrisTNG and TNG-Cluster Simulations". Santa Cruz, Chile. November 2024.
- **Invited Talk** *Decade of Discovery: Celebrating 10 Years of the Illustris Project* workshop: "Satellite Signatures in the Multiphase Halo Gas with the IllustrisTNG and TNG-Cluster Simulations". Castello di Gargonza, Italy. November 2024.
- **Contributed Talk** *EAS Annual Meeting 2024*: "Observable signatures from massive satellites in TNG-Cluster". Remote in Padova, Italy. July 2024.
- **Invited Seminar** Galaxy Cluster Seminar at the Center for Astrophysics | Harvard & Smithsonian: "Introducing the TNG-Cluster Simulation: the case for the circumgalactic medium around massive satellites". Remote in Cambridge, Massachusetts, USA. November 2023.

- **Contributed Talk** *Journey through Galactic Environments* conference: "Jellyfish galaxies as sources of cold gas in the CGM in the IllustrisTNG Simulations". Porto Ercole, Italy. September 2023.

Honors and Awards

- *D. Nelson Limber Prize* from the Department of Astronomy at University of Virginia in May 2020. **$500.**
- *Alexander Vyssotsky Prize* from the Department of Astronomy at University of Virginia in May 2019. **$1,000.**
- *Undergraduate Research Scholarship* from the Virginia Space Grant Consortium, a division of NASA, to be used at University of Virginia from August 2018-May 2019. **$4,000.**
- *ThinkSwiss Research Scholarship* from the Office of Science, Technology, and Higher Education at the Embassy of Switzerland, to be taken at University of Zurich from May-August 2018. **4,800 CHF**.

Teaching and Mentoring

- **Co-Supervisor** of Fulbright Fellow Shalini Kurinchi-Vendhan at Max Planck Institute of Astronomy with Annalisa Pillepich, November 2023-Present.
- **Tutor** for the Fortgeschrittenenpraktikum Wellenfrontanalyzse (Advanced Lab on Wavefront Analysis; FP36) at University of Heidelberg. Winter Semester 2022-23.
- **Assistant Tutor** at the Saas Fee Winter School *Circum-Galactic Medium Across Cosmic Time*. March 2023.
- **Tutor** for Cosmology (MVAstro4) at the University of Heidelberg. Summer Semester 2021, 2022.
- **Teaching Assistant** for Observational Astronomy (ASTR3130) at the Universty of Virginia. Spring 2020.
- **Tutor** for Advanced Placement (AP) Physics as part of the Global Teaching Project remotely teaching high school students in Mississippi. Fall 2019-Spring 2020.
- **Teaching Assistant** for the undergraduate telescope observing lab at the University of Virginia. Fall 2017-Spring 2020.
- **Co-Instructor** for The Philosophical Implications of Physics (INST1550) at the University of Virginia. Spring 2019.
- **Lab Assistant** for Elementary Physics Lab I and II (PHYS2630, PHYS2640) at University of Virginia. Fall 2018-Spring 2019.

Service & Outreach

- Referee for MNRAS, A&A, and AAS Journals. 2022-Present.
- Student Representative for the 16th generation of IMPRS-HD students. Fall 2020-Fall 2024.
- International Max Planck Research School Board in Heidelberg. Spring 2022-Fall 2024.
- Organizer of Merendella (Happy Hour) at the Max Planck Institute for Astronomy. Summer 2021-2023.
- Volunteer at Explore Science public day in Mannheim, Germany (in German). June 2022.
- Student Representative on the Graduate-Undergraduate Committee at the Department of Astronomy at the University of Virginia. Fall 2019-Spring 2020.
- Volunteer at Leander McCormick Observatory Public Nights at the University of Virginia. Fall 2017-Spring 2020.

Languages

Computer: `Python` (expert), `C` (advanced), `C++` (advanced), Fortran (proficient), `html` (proficient)

Natural: English (native), German (fluent, C1)

Academic References and Advisors

- Dr. Annalisa Pillepich, MPIA pillepich@mpia.de
- Dr. Céline Péroux, ESO cperoux@eso.org
- Dr. Dylan Nelson, ZAH dnelson@uni-heidelberg.de
- Prof. Dr. Hans-Walter Rix, MPIA rix@mpia.de