

# Christoph Saulder

## Curriculum Vitae

### Research position

- 07/2023 – ongoing **Postdoc**, Max Planck Institute for extraterrestrial Physics, Garching bei München, Germany.
- 06/2020 – 05/2023 **Research fellowship**, Korea Astronomy and Space Science Institute, Daejeon, South Korea.
- 11/2017 – 11/2019 **Research fellowship**, Korea Institute for Advanced Study, Seoul, South Korea.
- 07/2017 – 10/2017 **IT-consultant and software developer**, DSC GmbH, Vienna, Austria

### Higher Education

- 04/2010 – 03/2016 **PhD (Dr.rer.nat.) in Astronomy (obtained on March 24 2016)**, University of Vienna, graduated (grade A ( $>87\%$ )), topic of the PhD thesis: *Observational tests of an inhomogeneous cosmology*, supervisors: Werner Zeilinger (at the University of Vienna), Steffen Mieske (at ESO Chile), and Eelco van Kampen (at ESO Germany).  
11/2011-11/2014: funded by an ESO studentship  
02/2015-06/2015: teacher for mathematics at middle school
- 10/2007 – 04/2010 **MSc (Mag.rer.nat.) in Astronomy**, University of Vienna, graduated with distinction ( $>81\%$ ), topic of the master thesis: *Dynamics of the Local Group in different theories of gravity*, supervisor: Christian Theis.
- 10/2004 – 08/2007 **BSc (Bakk.rer.nat.) in Astronomy**, University of Vienna, graduated with distinction ( $>81\%$ ), topic of the bachelor thesis: *Lie-Integrator*, supervisor: Rudolf Dvorak.
- 10/2004 – 04/2013 **BSc in Physics**, University of Vienna, graduated ( $\sim 76\%$ ) by accreditation from the discontinued diploma programme (5-years MSc+BSc combined programme) done as a second undergraduate.

### Research overview

**28 accepted or submitted publications**  
**10 publications in preparation**  
**32 talks at conferences (including 4 invited ones)**  
**18 invited talks at seminar and colloquia**  
**active member of the Euclid consortium**  
**active member of the DESI collaboration**

### Awards and Funding

- 2011 **Winner of an ESO studentship**.  
11/2011-10/2013 hosted in Santiago, Chile  
01/2014-10/2014 hosted in Garching bei München, Germany

2005-2009 **3 times winner of a performance scholarship of the University of Vienna.**

won in 2005, 2006, and 2009, requires grades above  $\sim 80\%$  with at least 40 ECTS/year, but practically at least  $\sim 85\%$  due to funding limitation, competitive for the entire university across all fields

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## Research Interests

Cosmology	Large-scale Structure, Baryonic Acoustic Oscillations, Peculiar Motions, Inhomogeneous cosmology
Extragalactic Astronomy	Early-type Galaxies, Red nuggets, Internal Kinematics of Galaxies, Surveys, Data Astronomy
Computational Astrophysics	Hydrodynamical Simulations, Stellar Dynamical Numerical Simulations







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














## Conferences and Workshops

### Invited talks



- 17/06/2024 – **“The Dark Energy Spectroscopic Instrument (DESI): Y1 results”** , *Cosmology from Home 2024*, online.
- 22/01/2024 – **“Galaxy clusters: How to find them and how to use them for science?”**  & session chair, *IMPRS Symposium 2024*, Garching, Germany.
- 03/06/2022 **“Understanding DESI” & “Finding data within DESI”**, *DESI Korea local workshop*, Daejeon, Republic of Korea.
- 14/03/2022 – **“Which red nuggets can DESI bring to the table?”** , *Cosmic Nuggets - A feast of compact and massive galaxies across the Universe*, Sexten, Italy.








### Contributed talks

- 08/08/2024 **“The work of OU-PHZ at MPE”**, *Euclid DLR Meeting*, Garching, Germany.
- 27/05/2024 – **“Using public DESI data for Euclid”**, *Euclid OU-PHZ Meeting*, Garching, Germany.
- 25/03/2024 – **“Galaxies and clusters in DESI”** , *Ringberg Meeting 2024*, Kreuth, Germany.
- 11/12/2023 – **“DESI PV simulations and clusters” & session chair**, *DESI July 2023 Hybrid Collaboration Meeting*, Waikoloa, USA.
- 17/07/2023 – **“Spectroscopic cluster finding and the Coma Cluster in SV3”**, *DESI July 2023 Hybrid Collaboration Meeting*, attended online.
- 03/07/2023 – **“First Detection of the BAO Signal from Early DESI Data”** , *Cosmology from Home 2023*, online.
- 12/04/2023 – **“Digging for red nuggets in DESI data”**, *Meeting of the Korean Astronomical Society*, Jeonju, Republic of Korea.
- 04/07/2022 – **“The DESI peculiar velocity survey”** , *Cosmology from Home 2022*, online.
- 21/06/2022 – **“Identifying targets for the DESI peculiar velocity survey” & “Hunting for red nuggets in DESI” & session chair**, *DESI June 2022 Hybrid Collaboration Meeting*, Berkeley, USA.
- 13/04/2022 – **“Challenges of BAO peak measurement using photometric data”** , *Meeting of the Korean Astronomical Society*, Busan, Republic of Korea.
- 18/10/2021 – **“Using cross-correlations to recover the BAO peak in sparse spectroscopic surveys”** , *8th Korea-Japan workshop on Dark Energy*, online.
- 13/10/2021 – **“The DESI peculiar velocity survey”** , *Meeting of the Korean Astronomical Society*, Seopjikoji, Republic of Korea.

- 05/07/2021 – **“BAO peak measurements using photometric survey data”** , *Cosmology from Home 2021*, online.
- 07/12/2020 – **“Peculiar velocities as a cosmological probe”** , *7th Korea-Japan Workshop on Dark Energy: Maeda's Universe*, online.
- 17/02/2020 – **“Searching for systematic biases in redshift-independent distance indicators”** , *Cosmic Flows, Large-scale Structure, & Visualisation*, Stellenbosch, South Africa.
- 30/06/2019 – **“The fundamental plane and peculiar motions in the local universe”** , *Alpine Cosmology workshop*, La Berarde, France.
- 22/04/2019 – **“Fundamental plane distances: providing observational data for cosmological tests”** , *CosKASI Conference 2019 - The Correlated Universe*, Seogwipo, South Korea.
- 03/03/2019 – **“The fundamental plane as a probe for large-scale structure”** , *Cosmology on Safari*, Hluhluwe, South Africa.
- 18/02/2019 – **“Exotic galaxies as tests for hydrodynamical simulations”** , *Linking galaxies from the Epoch of initial star-formation to today*, Sydney, Australia.
- 04/11/2018 – **“Peculiar velocities derived from the Fundamental Plane”** , *8th KIAS workshop on Cosmology and Structure Formation*, Seoul, South Korea.
- 18/06/2018 – **“Further improving the Fundamental Plane with SDSS data”** , *Collaboration Meeting of the SDSS-IV*, Seoul, South Korea.
- 28/05/2018 – **“Peculiar motions in observations & simulations”** , *VI Meeting on Fundamental Cosmology*, Granada, Spain.
- 15/01/2018 – **“Peculiar motions and the fundamental plane”** , *7th Survey Science Group Workshop*, High1 resort, South Korea.
- 03/07/2016 – **“Testing gravity with low dark matter galaxies”** , *Alpine Cosmology workshop*, Bolzano, Italy.
- 20/07/2015 – **“Systematic variations of the Hubble flow”** , *Alpine Cosmology workshop*, Silvretta mountains, Austria & Switzerland.
- 22/06/2015 – **“Systematic variations of the Hubble flow”** , *EWASS 2015 conference*, Tenerife, Spain.
- 27/07/2012 – **“Observational tests of an inhomogeneous cosmology”** , *Cosmology Today workshop*, Santiago, Chile.
- 10/06/2012 – **“Observational tests of an inhomogeneous cosmology”**  & poster , *Dark Side of the Universe workshop*, Buzios, Brazil.












#### Other contributions








- 17/06/2024 – **Poster “The sizes of massive compact galaxies in Euclid”** , *Galaxies and AGN with the first Euclid data and beyond*, Rome, Italy.
- 19/02/2024 – **Poster and Flash Talk “Dark matter deprived galaxies in hydrodynamical simulations”**  , *Building Galaxies from Scratch*, Vienna, Austria.
- 14/02/2024 – **Participant**, *Galaxies and AGN with the first Euclid data and beyond*, Bologna, Italy.
- 23/02/2023 – **Participant**, *Friends-of-Sejong workshop*, Seoul, Republic of Korea.
- 05/12/2022 – **Spotlight Talk “The photometric BAO peak and target selection”**, *DESI December 2022 Hybrid Collaboration Meeting*, attended online.
- 02/08/2022 – **Participant**, *IAUGA 2022 XXXIst General Assembly International Astronomical Union*, Busan, Republic of Korea.
- 01/12/2021 – **Spotlight Talk “Cross-correlations in DESI-like simulations and in early DESI data”**, *December DESI 2021 Virtual Collaboration Meeting and Pre-meeting*, online.

- 25/10/2021 – **Participant**, *A Discussion on the Cosmological Principle*, online.  
28/10/2021
- 14/06/2021 – **Spotlight Talk “Galaxies, distances, motions, and gravity”**, *Summer DESI 2021 Virtual Collaboration Meeting*, online.  
18/06/2021
- 02/11/2020 – **Participant**, *9th KIAS workshop on Cosmology and Structure Formation*, Seoul, Republic of Korea.  
06/11/2020
- 24/08/2020 – **Participant**, *Cosmology from Home 2020*, online.  
04/09/2020
- 16/10/2019 – **Poster “Comparing distances obtained from galaxy scaling relations with the help of group catalogues”** , *Meeting of the Korean Astronomical Society*, Seoul, South Korea.  
18/10/2019
- 20/08/2018 – **Poster “Galaxies with low dark matter fractions”** , *XXXth General Assembly of the International Astronomical Union*, Vienna, Austria.  
31/08/2018
- 15/07/2018 – **Poster “Moving beyond the traditional fundamental plane”** , *The Physics of Galaxy Scaling Relations*, Kingston, Canada.  
20/07/2018
- 11/06/2018 – **Participant**, *Studying the Universe with GALaxy suRveys Revealing the Unlimited in ShangHai*, Shanghai, China.  
15/06/2018
- 22/05/2018 – **Poster “Improving fundamental plane distance measurements”** , *Statistical challenges in 21st century cosmology*, Valencia, Spain.  
25/05/2018
- 18/11/2013 – **Poster “The peculiar(?) case of [BHF2008] 19”** , *Deconstructing Galaxies: Structure and Morphology in the Era of Large Surveys conference*, Santiago, Chile.  
22/11/2013
- 22/07/2013 – **Poster “Observational tests of an inhomogeneous cosmology”** , *Ripples in the Cosmos conference*, Durham, UK.  
26/07/2013
- 14/05/2012 – **Poster “Observational tests of an inhomogeneous cosmology”** , *Testing General Relativity with Astrophysical Systems conference*, Boston, USA.  
17/05/2012

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## Invited talks at colloquia and seminars

- 08/12/2023 **Status of the DESI peculiar velocity survey** , *University of Hawai'i*, Honolulu, USA.
- 29/11/2023 **Cluster finding in spectroscopic surveys and DESI** , *Lawrence Berkeley National Laboratory*, Berkeley, USA.
- 26/04/2023 **An overview of DESI and the first detection of the BAO signal using its early data** , *Institute for Basic Science*, Daejeon, Republic of Korea.
- 08/07/2022 **The DESI Peculiar Velocity Survey and its Prospects for Cosmology** , *Asia Pacific Center for Theoretical Physics*, Pohang, Republic of Korea.
- 30/06/2022 **Designing the DESI peculiar velocity survey** , *California Institute of Technology*, Pasadena, USA.
- 17/06/2022 **The DESI peculiar velocity survey: from target selection to the first measurements** , *Lawrence Berkeley National Laboratory*, Berkeley, USA.
- 24/03/2022 **Galaxy scaling relations as distance indicators** , *University of Vienna*, Vienna, Austria.
- 09/03/2022 **The benefits and challenges of using photometric data for BAO peak measurements** , *University of Vienna*, Vienna, Austria.
- 03/03/2022 **Studying the BAO peak with more than just spectroscopic data** , *CosKASI ECR seminar*, online.
- 11/07/2019 **Measuring peculiar motions in the local universe** , *University of Bielefeld*, Bielefeld, Germany.
- 12/03/2019 **Placing limits on the backreactions from inhomogeneities using survey data** , *University of Cape Town*, Cape Town, South Africa.













- 28/02/2019 **Testing redshift-independent distance indicators with group catalogues** , ICRAR/UWA, Perth, Australia.
- 04/09/2018 **Using the fundamental plane to map peculiar motions in large-scale surveys** , ESO, Garching bei München, Germany.
- 03/12/2013 **Observational tests of an inhomogeneous cosmology** , ESO, Santiago, Chile.
- 16/04/2013 **Observational tests of an inhomogeneous cosmology** , Vienna University of Technology, Vienna, Austria.
- 02/10/2012 **Observational tests of an inhomogeneous cosmology** , University of Valparaiso, Valparaiso, Chile.
- 09/08/2012 **Observational tests of an inhomogeneous cosmology** , University of Concepcion, Concepcion, Chile.
- 12/10/2010 **Dynamics of the Local Group in different theories of gravity** , Vienna University of Technology, Vienna, Austria.

### Invited research visits

- 07/12/2023 – Hosted by David Sanders at *University of Hawai'i*, Honolulu, USA  
08/12/2023
- 29/11/2023 – Hosted by Satya Gontcho A Gontcho at *Lawrence Berkeley National Laboratory*, Berkeley,  
01/12/2023 USA
- 12/06/2023 – Hosted by Yong-Seon Song at *Korea Astronomy and Space Science Institute*, Daejeon,  
23/06/2023 Republic of Korea
- 26/04/2023 Hosted by Hyun Young Kang at *Institute for Basic Science*, Daejeon, Republic of Korea
- 07/07/2022 – Hosted by Stephen Appleby at *Asia Pacific Center for Theoretical Physics*, Pohang, Republic  
08/07/2022 of Korea
- 28/06/2022 Hosted by Barry Madore at *Carnegie Observatories*, Pasadena, USA
- 27/06/2022 – Hosted by Jae Hwan Kang at *California Institute of Technology*, Pasadena, USA  
30/06/2022
- 16/06/2022 Hosted by Johannes Lange at *Stanford University*, Stanford, USA
- 13/06/2022 – Hosted by Alex Kim at *Lawrence Berkeley National Laboratory*, Berkeley, USA  
17/06/2022
- 07/03/2022 – Hosted by Sabine Thater at *University of Vienna*, Vienna, Austria  
25/03/2022
- 08/07/2019 – Hosted by Dominik Schwarz at *University of Bielefeld*, Bielefeld, Germany  
12/07/2019
- 27/06/2019 – Hosted by Owain Snaith at *Paris Observatory*, Meudon, France  
28/06/2019
- 11/03/2019 – Hosted by Alvaro Dombriz at *University of Cape Town*, Cape Town, South Africa  
15/03/2019
- 25/02/2019 – Hosted by Claudia Lagos at *ICRAR/UWA*, Perth, Australia  
28/02/2019
- 09/07/2018 – Hosted by Ian Steer at *NASA Extragalactic Database*, Toronto, Canada  
13/07/2018
- 08/07/2015 – Hosted by Eelco van Kampen at *ESO*, Garching bei München, Germany  
09/07/2015
- 20/10/2014 – Hosted by Remco van den Bosch at *MPIA*, Heidelberg, Germany  
21/10/2014

- 08/08/2012 – Hosted by Michael Felhauer at *University of Concepcion*, Concepcion, Chile  
10/08/2012
- 10/05/2012 – Hosted by Igor Chilingarian at *Harvard-Smithsonian CfA*, Boston, USA  
15/05/2012

## Outreach and Press

- 03/10/2024 Managing the Euclid and spectroscopy stations during the Open House Day at MPE ; Garching, Germany
- 11/2023 – ongoing Organiser of the Euclid blog series “Portraits of Euclidean” 
- 18/04/2024 Presentation and tour of the MPE for a high school class; Garching, Germany
- 07/03/2024 Presentation and tour of the MPE for a mixed-age group; Garching, Germany
- 06/11/2023 Article in Astronomy Magazine “Does  $E = mc^2$  hold true for dark matter and dark energy?” 
- 24/10/2022 Meeting with the Austrian Minister of Foreign Affairs concerning international scientific collaborations; Seoul, Republic of Korea
- 11/10/2021 DESI Blog entry about the DESI peculiar velocity survey 
- 22/04/2016 “Long night of research” public outreach event - station “our solar system on small scales”; Vienna, Austria
- 30/10/2013 Experiments for children at the family day celebrating the 50<sup>th</sup> anniversary of ESO in Chile; Sanitago, Chile
- 10/10/2013 Educative workshop on “planets and rockets” with experiments for children at the National Science Fair ; Sanitago, Chile
- 13/08/2013 Talk with experiments on “The solar system and beyond” for children at Deutsche Schule St. Thomas Morus; Sanitago, Chile
- 02/07/2013 Talk with experiments on “The solar system and beyond” for children at Colegio Dunastair ; Sanitago, Chile
- 16/04/2013 Interview on the Austrian radio Ö1 
- 12/03/2013 Meeting with the Austrian Minister of Science at the Austrian embassy; Santiago, Chile
- 19/02/2013 Article about myself in the local newspaper MeinBezirk 
- 19/12/2012 Interview with me in the Austrian newspaper Kurier 
- 06/12/2012 Meeting with the Austrian President at ESO ; Santiago, Chile
- 23/11/2012 Guiding a group of Austrian journalists through the ESO premises ; Santiago, Chile
- 10/11/2012 ESO outreach at 170<sup>th</sup> anniversary of the Universidad de Chile on Cerro Calan ; Santiago, Chile
- 16/11/2011 Meeting with a delegation of several members of the Austrian parliament at ESO; Santiago, Chile
- 15/06/2011 Public observations of the lunar eclipse at the Institute for Astronomy of the University of Vienna; Vienna, Austria
- 14/05/2011 Day of Astronomy at University of Vienna; Vienna, Austria

## Observing experience

- 2021-2024 *Dark Energy Spectroscopic Instrument (DESI)* at the *Mayall Telescope*, remote: 44 nights as Support Observing Scientist
- 2023 *MODS at the Large Binocular Telescope (LBT)*, on-site on Mount Graham: 7 nights as Observer



2007 *photometry at Vienna Little Telescope*, on-site in Vienna: 1 night observations of variable stars and bright nearby galaxies

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## Scientific community work

### Seminar and conference organisation


- 09/2021-09/2023 Co-organizer of the *DESI research forum* seminar series
- 03/06/2022 Main organiser of the DESI Korea local workshop (Daejeon, Republic of Korea)
- 01/2021-06/2022 Co-organizer of the *CosKASI ECR seminar* series 
- 05/2019-11/2019 Organizer of the *informal weekly Astro-Group meeting* at KIAS
- 04/11/2018 – LOC member and conference poster designer of the 8th KIAS workshop on Cosmology and Structure Formation (Seoul, South Korea)
- 09/11/2018
- 20/08/2018 – Volunteer at the XXXth General Assembly of the International Astronomical Union (Vienna, Austria)
- 31/08/2018
- 18/11/2013 – LOC member of the Deconstructing Galaxies: Structure and Morphology in the Era of Large Surveys conference (Santiago, Chile)
- 22/11/2013
- 2005 – 2009 LOC member of the Second, Third, Fifth, and Sixth Vienna Central European Seminar on Particle Physics and Quantum Field Theory (Vienna, Austria)
- 29/06/2006 LOC member of the First Vienna Seminar of Nobel Laureates 2006 (Vienna, Austria)

### Other duties and contributions

- 10/2024-ongoing External *Postdoc representative* of the MPE within PostdocNet
- 10/2024-ongoing Co-lead of the *Cluster informal group* in DESI
- 04/2024-09/2024 Co-lead of the *Cluster topical group* in DESI
- 03/2024-10/2024 Main organiser of the outreach activities of the OPINAS group at MPE
- 09/2023-12/2023 Member of the *Selection Committee for the next DESI spokespersons*
- 02/2022-12/2022 Mentor for two student in KASI for DESI-related projects
- 07/2022 Mentor for students at the Cosmology from Home 2021 workshop (online)
- 09/2021-ongoing Member of the DESI early-career scientists committee
- 01/2021-ongoing Maintaining the website of the cosmology group in KASI
  - \* leader/co-leader of three internal DESI projects
  - \* 1-time referee for A&A

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## Technical projects

- 06/2024-ongoing *Euclid Consortium*: developer of a tool to compare external spectroscopic redshifts to new Euclid data for quality checks
- 05/2024-10/2024 *Euclid Consortium*: developer of the augmented reality model of Euclid for public outreach  (with Sofia Contarini)
- 02/2022-04/2024 *DESI collaboration*: DESI-KP45 mock challenge (building and testing the pipeline for the BAO-analysis using mocks)
- 01/2022-10/2023 *KASI*: co-developer of MUSELI: a pPXF wrapper for MUSE IFU data (with Adarsh Ranjan and Garreth Martin)
- 09/2021-03/2024 *DESI collaboration*: DESI lensing pipeline: providing catalogues for photometric redshift calibrations, running fiber-assignment on mock catalogues (with Chris Blake)
- 10/2021 *DESI collaboration*: Improving a Python-script to add the observations taken for the DESI peculiar velocity survey to the DESI database (with Alex Kim)

- 09/2012 *La Silla observatory*, Chile: Developing Python-scripts for the Wide-Field Imager to create health-check plots from the quality control pipeline and to send them to a static web page (with Fernando Selman)
- 07/2012 *Paranal observatory*, Chile: Creating shell-scripts to dynamical update the zero-points for several instruments, such as OmegaCam, VIMOS, and VIRCam (with Steffen Mieske)

## Computer skills

Programming and Script-languages	<b>advanced skills:</b> Python, Jupyter-notebook, Fortran, SQL, LaTeX, MPI, C/C++, Pascal/Delphi, Bash-Shell, ABAP <b>basic skills:</b> Java, R, Basic, JavaScript, HTML, CSS, PHP, microcontroller programming, A-frame
Software user experience	Gnuplot, GIMP, Blender, Origin, NEMO, Topcat, SAO DS9, Galfit, MaximDL, Windows, Linux (Ubuntu, Fedora, SUSE), Office (MS, LibreOffice, Openoffice), SAP, Github

## Languages

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|--------------------------|---------------------------|------------------------------|
| ○ <b>German</b> (Native) | ○ <b>English</b> (Fluent) | ○ <b>Spanish</b> (Very good) |
| ○ <b>French</b> (Good)   | ○ <b>Russian</b> (Basics) | ○ <b>Korean</b> (Basics)     |

## References

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## Publication List


### Submitted papers


**Saulder, C.**, et al: *Studying the Baryon Acoustic Oscillations using photometric redshifts from the DESI Legacy Imaging survey DR9* submitted to Astronomy & Astrophysics.


Yuan, S. et al. (including **Saulder, C.**): *Redshift evolution and covariances for joint lensing and clustering studies with DESI Y1* submitted to MNRAS. 


Said, K. et al. (including **Saulder, C.**): *DESI Peculiar Velocity Survey – Fundamental Plane* submitted to MNRAS. 


Mena-Fernández, J., et al. (including **Saulder, C.**): *HOD-Dependent Systematics for Luminous Red Galaxies in the DESI 2024 BAO Analysis* submitted to JCAP. 

Rashkovetskyi, M., et al. (including **Saulder, C.**): *Semi-analytical covariance matrices for two-point correlation function for DESI 2024 data* submitted to JCAP. 

Paillas, E., et al. (including **Saulder, C.**): *Optimal Reconstruction of Baryon Acoustic Oscillations for DESI 2024* submitted to JCAP. 


DESI Collaboration, et al. (including **Saulder, C.**): *DESI 2024 VI: Cosmological Constraints from the Measurements of Baryon Acoustic Oscillations* submitted to JCAP. 


DESI Collaboration, et al. (including **Saulder, C.**): *DESI 2024 IV: Baryon Acoustic Oscillations from the Lyman Alpha Forest* submitted to JCAP. 


DESI Collaboration, et al. (including **Saulder, C.**): *DESI 2024 III: Baryon Acoustic Oscillations from Galaxies and Quasars* submitted to JCAP. 


### Refereed papers


Fernández Gil, D., Hodgson, J. A., L'Huillier, B., Asorey, J., **Saulder, C.**, Finner, K., Jee, M. J., Parkinson, D., & Combes, F.: *A physical connection in galaxies over 3 orders of magnitude in scale.* accepted in Nature Astronomy.

Lange, J. U., et al. (including **Saulder, C.**): *Systematic Effects in Galaxy-Galaxy Lensing with DESI* in the Open Journal of Astrophysics, vol. 7, id. 57. 


DESI Collaboration, et al. (including **Saulder, C.**): *The Early Data Release of the Dark Energy Spectroscopic Instrument* in the Astronomical Journal, Volume 168, Issue 2, id.58, 33 pp. 


DESI Collaboration, et al. (including **Saulder, C.**): *Validation of the Scientific Program for the Dark Energy Spectroscopic Instrument* in the Astronomical Journal, Volume 167, Issue 2, id.62, 33 pp. 


Moon, J. et al, (including **Saulder, C.**): *The First Detection of the BAO signal in early DESI Data* in MNRAS, Volume 525, Issue 4, pp.5406-5422. 

Hadzhiyska, B. et al, (including **Saulder, C.**): *Synthetic light cone catalogues of modern redshift and weak lensing surveys with AbacusSummit* in MNRAS, Volume 525, Issue 3, pp.4367-4387. 


Ruggeri, R. et al (including **Saulder, C.**): *A data compression and optimal galaxy weights scheme for Dark Energy Spectroscopic Instrument and weak lensing datasets* in MNRAS, Volume 525, Issue 3, pp.3865-3878. 


Hahn, C. et al (including **Saulder, C.**): *PROVABGS: The Probabilistic Stellar Mass Function of the BGS One-percent Survey* in the Astrophysical Journal, Volume 963, Issue 1, id.56, 14 pp. 


Brodzeller, A. et al, (including **Saulder, C.**): *Performance of the Quasar Spectral Templates for the Dark Energy Spectroscopic Instrument* in the Astronomical Journal, Volume 166, Issue 2, id.66, 17 pp. 


Rashkovetskyi, M. et al (including **Saulder, C.**): *Validation of semi-analytical, semi-empirical covariance matrices for two-point correlation function for early DESI data* in MNRAS, Volume 524, Issue 3, pp.3894-3911. 


**Saulder, C.**, et al: *Target selection of the DESI peculiar velocity survey* in MNRAS, Volume 525, Issue 1, pp.1106-1125. 


Hahn, C. et al (including **Saulder, C.**): *DESI Bright Galaxy Survey: Final Target Selection, Design, and Validation* in the Astronomical Journal, Volume 165, Issue 6, id.253, 24 pp. 


Lan, T. et al (including **Saulder, C.**): *The DESI Survey Validation: Results from Visual Inspection of Bright Galaxies, Luminous Red Galaxies, and Emission Line Galaxies* in the Astrophysical Journal, Volume 943, Issue 1, id.68, 18 pp. 


DESI collaboration including **Saulder, C.**: *Overview of the Instrumentation for the Dark Energy Spectroscopic Instrument* in the Astronomical Journal, Volume 164, Issue 5, id.207, 62 pp. 

**Saulder, C.**, Snaith, O. N., Park, C. & Laigle, C. : *Isolated dark matter deprived galaxies in hydrodynamical simulations: real objects or numerical artefacts?* in MNRAS, Volume 491, 1278pp. 

**Saulder, C.**, Mieske, S., Zeilinger, W. W., & van Kampen, E.: *Hubble flow variations as a test for inhomogeneous cosmology* in Astronomy & Astrophysics, Volume 622, id.A83, 19 pp. 

**Saulder, C.**, van Kampen, E., Chilingarian, I., Mieske, S., & Zeilinger, W. W.: *The matter distribution in the local universe as derived from SDSS DR12 and 2MRS data* in publication in Astronomy & Astrophysics, Volume 596, id.A14, 33 pp. 

**Saulder, C.**, van den Bosch, R. & Mieske, S.: *Dozens of compact and high dispersion early-type galaxies in SDSS* in Astronomy & Astrophysics, Volume 578, id.A134, 36 pp. 

**Saulder, C.**, Mieske, S., Zeilinger, W. W., & Chilingarian, I.: *Calibrating the fundamental plane with SDSS DR8 data* in Astronomy & Astrophysics, Volume 557, id.A21, 36 pp. 

### Papers in preparation

DESI Collaboration, et al. (including **Saulder, C.**): *DESI 2024 VII: Cosmological constraints from full-shape analyses of the two-point clustering statistics measurements* in preparation (47 pages).

DESI Collaboration, et al. (including **Saulder, C.**): *DESI 2024 V: Analysis of the full shape of two-point clustering statistics from galaxies and quasars* in preparation (75 pages).

DESI Collaboration, et al. (including **Saulder, C.**): *DESI 2024 II: Sample definitions, characteristics and two-point clustering statistics* in preparation (75 pages).

DESI Collaboration, et al. (including **Saulder, C.**): *DESI 2024 I: Data Release 1 of the Dark Energy Spectroscopic Instrument* in preparation (48 pages).

Blake, C. et al. (including **Saulder, C.**): *The DESI-lensing mock challenge: large-scale cosmological analysis of 3x2pt statistics* in preparation (25 pages).

Douglass, K. et al. (including **Saulder, C.**): *DESI EDR: Deriving the Tully-Fisher Relationship with the DESI Peculiar Velocity Survey* in preparation (16 pages).


**Saulder, C.**, Oh, M., Song, Y-S, & Zheng, Y.: *Using cross-correlations to measure the BAO peak in sparse spectroscopic surveys* in preparation (7 pages).


Blanco, D. & **Saulder, C.** et al.: *A Unified Redshift Calibration of DES, HSC and KiDS for Lensing Cross-Correlations with DESI Targets* in preparation (5 pages).


Icaza-Lizaola, M. et al. (including **Saulder, C.**): *DESI LRG machine learning mocks* in preparation (8 pages).

Ranjan, A., Martin, G., Sheen, Y.K., **Saulder, C.**, Bag, S., & Vaddi, S.: *MUSELI: A GUI code for handling VLT/MUSE IFU spectroscopic data* in preparation (14 pages).

#### Conference proceedings

Douglass, K., BenZvi, S., Nofi, H., Uberoi, N., **Saulder, C.**, Howlett, C., & Said, K.: *DESI EDR: Calibration of the Tully-Fisher Relationship with the DESI Peculiar Velocity Survey* in American Astronomical Society, AAS Meeting #243, id. 407.09. Bulletin of the American Astronomical Society, Vol. 56, No. 2 

Rashkovetskyi, M., Rossi, G., Moon, J., **Saulder, C.**, Valcin, D., Padmanabhan, N., Seo, H-J. ; de Mattia, A., & Ross, A.: *First Detection of the BAO Signal from Early DESI Data* in APS April Meeting 2023, abstract id.U14.002 

**Saulder, C.**: *Exotic galaxies as tests for hydrodynamical simulations* in Linking Galaxies from the Epoch of Initial Star Formation to Today - Proceedings of the 2019 Elizabeth and Frederick White Research Conference held 18-22 February, 2019 

**Saulder, C.**, Mieske, S., & Zeilinger, W. W.: *Observational aspects of an inhomogeneous cosmology* in Proceedings of VIII International Workshop on the Dark Side of the Universe (DSU 2012) 