David Sánchez Cid

University of Zurich
david.sanchezcid@physik.uzh.ch
0000-0003-3054-7907

Physik-Institut
Universität Zürich
Winterthurerstrasse 190
8057 Zürich, Schweiz

Education

Nov 2024 - Present	**Postdoctoral research associate at the University of Zurich** Advisor: Prof. Dr. M. Soares-Santos
Sep 2020 - Oct 2024	**María de Maeztu FPI Fellowship, CIEMAT – Ph.D. Physics, Universidad Complutense de Madrid** *"Combined analysis of Weak Lensing and Galaxy Clustering with galaxy surveys"* Advisors: Dr. I. Sevilla-Noarbe, Dr. J. Sánchez, Dr. E. Sánchez
Sep 2018 - Sep 2019	**Master on Theoretical Physics, Universidad Complutense de Madrid** *"Fullshape angular correlation function analysis of the DES Y1 BAO sample"* Advisor: Dr. A. Carnero-Rosell
Sep 2014 - Sep 2018	**Degree on Physics, Universidad Complutense de Madrid**

Honours and Grants

Balzan Junior Research Fellow at New College, Oxford (Hilary term) [£4.000]	2024
DES Collaboration funding to attend the meeting at University of Illinois at Urbana-Champaign [1.600 $]	2023
Maria de Maeztu visiting Fellow at Institute of Astronomy KICC, Cambridge - Jun [6.000 €]	2023
DES Collaboration funding to attend the meeting at University of Portsmouth [1.600 $]	2023
DES Collaboration funding to attend the meeting at Duke University [1.600 $]	2022
LSST Corporation Investing in Discovery grant - visit KICP, University of Chicago, Apr. - Jun. [6.000 $]	2021
María de Maeztu FPI fellowship for the recruitment of Ph.D. candidates [72.000 €]	2020

Research achievements

- Lead the Dark Energy Survey modeling and validation analysis team for the combined study of Weak Lensing and Galaxy Clustering required for the obtention of the Legacy results.
- Coordinate an analysis team with ∼30 international researchers.
- Lead one of the Legacy Survey of Space and Time - Dark Energy Science Collaboration precursor projects in which we develop the combined analysis of Weak Lensing and Galaxy Clustering with the first public data release of the Hyper Suprime-Cam in harmonic space.
- Experience with map-level data, through the creation of bright foreground objects mask and validation of survey property maps for the Dark Energy Survey Science Release working group.

Selected Talks

DESC Seminar: HSC 3x2pt analysis in harmonic space as precursor of the LSST	12/2024
Contributed Talk: The DES Year 6: Multi-Probe Modeling Strategy and Validation, SEA meeting, Granada	07/2024
Invited plenary: Status of the 3x2pt pipeline: from DV to cosmology constraints, ETH, Zurich	07/2024

Group seminar Talk: HSC 3x2pt analysis in harmonic space as precursor of the LSST, Oxford	01/2024
Contributed Talk: IX MFC - HSC 3x2pt analysis in harmonic space as precursor of the LSST, Tenerife	11/2023
Group seminar Talk: Modeling for the combined analysis of WL and GC with DES Year 6, Princeton	11/2023
Invited plenary: Modeling for the combined analysis of WL and GC, DES meeting at UIUC, Illinois	10/2023
Contributed Talk: COSMO'23 – HSC 3x2pt analysis in harmonic space as precursor of the LSST, Madrid	09/2023
Group seminar Talk: Combined analysis of WL and GC with Stage III surveys, Cambridge	06/2023
Poster: Cosmoverse – HSC 3x2pt analysis in harmonic space as precursor of the LSST, Lisbon	05/2023
Group seminar Talk: BCN-MAD, DES Y6 modeling challenges, online	03/2023
Department Talk: Cosmology from weak lensing and galaxy clustering, Ciemat	12/2022
Contributed Talk: CPAN meeting, Large-scale structure and weak lensing modeling, Bilbao	11/2022
Contributed Talk: VIII MFC, Theoretical modeling for WL and GC analysis with DES, IAA, Granada	11/2022
Poster: SEA meeting, HSC 3x2pt analysis in harmonic space as a precursor of the LSST, Tenerife	09/2022
Contributed Talk: EAS, HSC 3x2pt analysis in harmonic space as a precursor of the LSST, Valencia	07/2022
Group seminar Talk: HSC 3x2pt analysis in harmonic space as a precursor of the LSST, UChicago	05/2022
Group seminar Talk: echoIA, NLA modeling for intrinsic alignment modeling with PAUS, online	02/2022
Contributed Talk: Moriond - HSC 3x2pt analysis in harmonic space as a precursor of the LSST, Italy	01/2022
Contributed Talk: TAE - Observational Cosmology: 3x2pt analysis, Benasque	09/2021
Contributed Talk: VII MFC - Fullshape fitting of ACF of DES Y1 BAO sample, UCM, Madrid	09/2019

Leadership Positions

Dark Energy Survey Builder	2023 - on-going
Ciemat Phy6cool summer school – Member of the Local Organizing Committee	2023
Dark Energy Survey Team Coordinator for Modeling and Validation	2022 - on-going
Lead of LSST-DESC Precursor project: HSC 3x2pt analysis in harmonic space	2021 - on-going

Visiting stays

- **Department of Physics, University of Oxford** (Jan.- Mar. 2024) – Visiting Prof. Alonso to work in the joint analysis of Cosmic Microwave Background data from Planck and Large-Scale Structure maps obtained by Hyper-Suprime Cam
- **Department of Astrophysical Science, Princeton University** (Nov. 202) – Visiting Prof. Amon to continue our work in the analysis of the Dark Energy Survey Year 6 data set.
- **Institute of Astronomy, University of Cambridge** (Jun. - Jul. 2023) – Visiting Prof. Amon to work in the modeling for the combined analysis of Weak Lensing and Galaxy Clustering with Dark Energy Survey data
- **Kavli Institute for Cosmological Physics, UChicago & Fermilab** (Apr. - Jun. 2022) – Visiting Prof. Chang and Dr. Sanchez to work on our HSC 3x2pt re-analysis as precursor of the LSST project.

Teaching and mentoring

Lecturer – Ciemat Summer school for undergraduates, "Cosmology: theory and observations" (2023)
Supervised 5 scientists at the secondary school to undergraduate level:
Javier Carreira, BSc Universidad Complutense de Madrid, Phy6cool Cosmology project (2023)
Jorge Rodríguez, BSc Universidad de Valladolid, Phy6cool Cosmology project (2023)
Diego Tessainer, BSc Universidad Complutense de Madrid, Phy6cool Cosmology project (2023)
Inés Sainz, Secondary school student, "*Analyzing the cosmic microwave background anisotropies*" (2021 - 2022)
Ibai Burgos, Secondary school student, "*Analyzing the accelerated expansion of the Universe with SN Ia*" (2020 - 2021)

Science communication

Outreach talk at Colegio Amorós, "*Cosmología a través de la ciencia ficción*" (2020)
Blog in Spanish focused on cosmology and physics outreach since 2017 with $>$ 9.000 visits

Publications

Papers led or played a leading role (first, second or third author papers):
[1] **Sanchez-Cid, D.**, et al. (in prep.) *LSST-DESC precursor project: Combined analysis of Weak Lensing and Galaxy Clustering with HSC data in harmonic space*
[2] **Sanchez-Cid, D.**, et al. (in prep.) *Dark Energy Survey Year 6 Results: Multi-probe Modeling strategy and validation*
Selected papers as part of the main science team:
[3] L.Bigwood, A. Amon et al. *Weak lensing combined with the kinetic Sunyaev Zel'dovich effect: A study of baryonic feedback*
[4] Dark Energy Survey Collaboration (2023); Physical Review D.; *Dark Energy Survey Year 3 Results: Constraints on extensions to ΛCDM with weak lensing and galaxy clustering*
[5] Dark Energy Survey Collaboration (2022); Physical Review D.; *Dark Energy Survey Year 3 results: Cosmological constraints from galaxy clustering and weak lensing*
[6] Rosell, A. et al. (2022); MNRAS; *Dark Energy Survey Year 3 results: galaxy sample for BAO measurement*
[7] Dark Energy Survey Collaboration (2022); Physical Review D.; *Dark Energy Survey Year 3 results: A 2.7% measurement of baryon acoustic oscillation distance scale at redshift 0.835*
[8] Porredon, A. et al. (2022); Physical Review D.; *Dark Energy Survey Year 3 results: Cosmological constraints from galaxy clustering and galaxy-galaxy lensing using the MagLim lens sample*
[9] Ferrero, I. et al. (2022); A&A; *Dark Energy Survey Year 3 Results: Galaxy mock catalogs for BAO analysis*
[10] Rodriguez-Monroy, M. et al. (2022); MNRAS; *Dark Energy Survey Year 3 results: galaxy clustering and systematics treatment for lens galaxy samples*