

### Research interest

- Observational cosmology The large-scale structure of the Universe, galaxy formation and evolution, active galaxies, gravitational lensing, clusters of galaxies.
- Theory N-body simulations, structure formation, logic and relativity.
- Data science Digital twins, end-to-end simulations, forward models, BigData analysis.

### Professional History and Education

- Jan. 2017 – **Researcher at Max-Planck-Institut für extraterrestrische Physik** [www.mpe.mpg.de](http://www.mpe.mpg.de), *MPG, Garching, Germany*, collaborators: A. Merloni, M. Salvato, G. Ponti, E. Bulbul, K. Nandra  
The large scale structure seen in X-ray : clusters, AGN, galaxies. Clustering and lensing of AGN and galaxies. Cosmology with the cluster halo mass function. End-to-end cosmological simulations for X-ray all sky surveys. Optical follow-up of Xray sources with photometry and spectroscopy.
- Jan. 2014 – **Severo Ochoa post-doctoral fellow at the Instituto de Fisica Teorica of the Universidad Autonoma de Madrid** [www.ift.uam-csic.es](http://www.ift.uam-csic.es), *CSIC, Madrid, Spain*, collaborators: F. Prada, G. Yepes  
Jan 2017  
N-body simulations and galaxy surveys.
- Sept. 2013 – **Invited researcher at Centre de Physique des Particules de Marseille and Laboratoire d'Astrophysique de Marseille**, *CNRS, Marseille, France*, collaborators: A. Ealet, L. Tresse, S. Escoffier, J. Richard  
Nov. 2013  
Abundance of [OII] emitting galaxies.
- Sept. 2010 – **PhD in Astrophysics and Cosmology**, *Laboratoire d' Astrophysique de Marseille* <http://lam.fr>, CNRS, France, advisors: J-P. Kneib, C. Schimd. Defense: 21.06.2013  
Aug. 2013  
Baryonic acoustic oscillations with emission line galaxies at intermediate redshift. The large-scale structure of the Universe.
- Mar. 2010 – **Research Engineer**, *Laboratoire d' Astrophysique de Marseille* <http://lam.fr>,  
Aug. 2010  
CNRS, France, advisors: J-P. Kneib  
Measurement of the galaxy power spectrum.
- Sep. 2008 – **Master degree in Physics**, *Ecole Polytechnique Fédérale de Lausanne, LASTRO*  
Feb. 2010 <http://lastro.epfl.ch>, Switzerland, Advisors: G. Meylan, F. Courbin  
Search for lensed quasars to measure precisely their mass distribution.
- Sep. 2005 – **Master degree in Engineering**, *Ecole Polytechnique* [www.polytechnique.edu](http://www.polytechnique.edu),  
Sep. 2010  
Palaiseau, France, Advisor: J-P. Beaulieu  
Exoplanet detection using microlensing.

- Sep. 2003 – **Classes préparatoires aux grandes écoles**, *Lycée du Parc* <https://lyceeduparc.fr>, PCSI, PC\*  
Sep. 2005  
Sep. 2000 – **Baccalauréat and Abitur (Double Graduation in French and German)**,  
Sep. 2003 *International high school*, Grenoble, France

## Long term visits

- LBL, Berkeley **Affiliated researcher at Lawrence Berkeley National Laboratory**, Berkeley, CA, USA, Collaboration with D. Schlegel, June 2015  
CFA, Harvard **Center For Astrophysics, Harvard**, Cambridge USA, Collaboration with D. Eisenstein, February-March 2013

## Publications

**158** scientific articles

- 138** in peer-reviewed journal, including
  - 14** as first author
  - 7** supervising PhD students
  - 34** in close collaboration
  - 56** in medium-size collaborations
  - 27** in large consortia
- 20** in non-peer-reviewed journals or arXiv, including
  - 16** 'white papers'
  - 4** ArXiv publications

**13** Proceedings

**25** catalogs on catalogues Vizier, and **10** SDSS value-added catalogues

Citation metrics on ADS bumblebee (accessed on 27.09.2023):

- 53** at h-index
- 14,657** citing papers
- 213,841** reads

Citation metrics on ADS bumblebee (accessed on 12.02.2023):

- 50** at h-index
- 13,359** citing papers
- 194,550** reads

## Funding

- PhD grant 'polytechnicien' (AMX), 2010-2013 63,000 Euros
- Predoc fund, 2013 (CFA Harvard), 3000 USD
- Application to ERC starting grant (2019) on cluster cosmology, graded B after phase 1 (part B1)
- Application to ERC consolidator grant (2023) on the hot circum galactic medium and galaxy quenching, graded B after the phase 2 (part B1 + B2 and interview)

## Institutional responsibilities

- MNRAS, A&A reviewer
- ANR, INAF reviewer (French and Italian funding agency)

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- 2019-: principal investigator of the eROSITA/4MOST cluster spectroscopic survey (500,000 fiber hours)
- 2019-: lead of the eROSITA/SDSS-V cluster spectroscopic survey
- 2018-: co-chair of the eRosita/HSC AGN and clustering working group (with M. Salvato, Y. Toba and T. Nagao)
- 03.2019-09.2022: lead of the eROSITA cosmology work package
- 01.2018-01.2020: co-chair of the eBOSS galaxy science working group (with J. Tinker)
- 01.2017-01.2020: Responsible for the SDSS-IV/eBOSS SPIDERS data.
- 01.2014-06.2018: Responsible for the SDSS-IV/eBOSS ELG program. About 450h of spectroscopy to obtain a quarter million redshifts over 2.5 years

## Students supervision

- PhD **S. Shreeram**, 2023-, MPE Garching, Germany, with K. Nandra, 100%  
**Y. Zhang**, 2021-, MPE, with G. Ponti, K. Nandra, 50%  
**R. Seppi**, 2019-2023, MPE, with K. Nandra, 100%  
**J. Ider Chitham**, 2017-2021, MPE, with K. Nandra, 100%  
**F. Albareti**, 2015-2018, UAM, Madrid, Espagne, with F. Prada, 20%  
**S. Rodriguez-Torres**, 2014-2017, UAM Madrid, Spain, with F. Prada & Pr. Yepes, 30%  
**G. Favole**, 2012-2016, UAM Madrid, Spain, with F. Prada, 30%
- Master **S. Teymourzadeh**, MPE, 2023, 100%  
**S. Shreeram**, MPE & EPFL, 2021, 100%  
**C. Caruncho Llaguno**, UAM Madrid, Spain, 2016, 100%

## Teaching, 544h

- 19-23 Nov. 2018 **4h. Lecture + exercise. Cosmological surveys**, AHEAD school on X-ray and multi-wavelength surveys, MPE/MPG, Garching, Germany
- 21-52 Nov. 2016 **2h Lecture + exercise. Python for Skies and Universes**, 2nd SELGIFS Advanced School on Integral-Field Spectroscopic Data Analysis, Universidad Autonoma de Madrid, Spain
- Spring 2014, 2015, 2016 **24h. Studying the large scale structure of the Universe with galaxy surveys**, Universidad Autonoma de Madrid, Spain, Master of Physics, Advanced cosmology course
- 15-19 Sep. 2014 **4h. Target selection in galaxy surveys**, Corfu dark energy and galaxy survey school for graduate students, In collaboration with Pr. J. A. Newman, Corfu, Greece
- Autumn 2010, 2011, 2012 **210h. Optics, mechanics, acoustics, mathematics**, Université de Marseille Provence, France, Physics Bachelor 1st and 2nd year
- 2007, 2008 **300h. Mathematics**, Classes préparatoires at Optimal Prépa, Paris, France, Physics and Mathematics in Bachelor 1st and 2nd year, <http://www.optimalsupspe.fr>

## Outreach activities

- Outreach article in German in the magazine 'Physik in unserer Zeit' Wiley editions (March 2022).

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- Two interviews with journalist Tristan Vey leading to two articles about eROSITA in Le Figaro.
- Open doors at MPE, Garching. 21.10.2017. 450 visitors. Animation of the rainbow workshop (in German)
- Fête de la science, LAM, Marseille, France. 12.10.2010. 300 student. Spectroscopy workshop.

## Participation in projects

### Currently

#### eROSITA (X-ray telescope)

- active member of three working groups: galaxy clusters and cosmology, AGN, normal galaxies
- cross working group activity: eROSITA end-to-end simulations of the X-ray large scale structure & multi-wavelength models of the AGN, cluster and galaxy samples

#### 4MOST (optical spectrograph on VISTA)

- PI of the 4MOST/eROSITA cluster survey (S5)
- Member of four other 4MOST surveys : S6 - AGN Survey; S8 - Cosmology Redshift Survey, S15 - Chilean Cluster Galaxy Evolution Survey, S17 - Transform our Understanding of the Baryon Cycle with High-Resolution Quasar Spectroscopy.
- Member of three working groups: simulation working group (WG2), extra-galactic pipeline working group (WG8), facility simulator team and of the Operation System (4FS, OpSys)
- I created Mock catalogues for five surveys I am part of S5, S6, S8, S15, S17.

#### SDSS-V (optical spectrographs at APO and LCO)

- X-ray Clusters of Galaxies Working Group Chair
- member of black hole mapper executive group
- Responsible for the target selection of galaxies in eROSITA clusters

#### Legacy Imaging Surveys DR10 Run Manager.

#### Euclid Member of the Clusters of Galaxies Science Working Group

### Previously

**SDSS-IV/SPIDERS.** Data scientist for SPIDERS: coordination of data analysis and of value added catalogues. Representative for MPE (institute wide, about 400 persons) at the SDSS-IV collaboration council.

**SDSS-III/BOSS, SDSS-IV/eBOSS.** Emission line galaxies: target selection, redshift measurement, emission line measurement, catalog creation. **Architect** of the SDSS-IV collaboration.

**Legacy Imaging Surveys DR3 & DR5.** Photometric pipeline (TRACTOR), data simulation (OBIWAN/DESIIM).

**MultiDark.** algorithms to measure the halo mass function and large scale halo bias. Populating simulations with galaxies.

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**DESI.** target selection of emission line galaxies.

**VLT/FORS2, VLT/MUSE.** measurement of galaxy properties in 1D spectra.

**CS82 & VICS82.** lensing surveys. Visual inspection and bright star mask creation.

## Conference organisation, seminars

- Organizer. EAS lunch session about the hot CGM. 07.2023. Krakov Poland. 50 participants.
- Co-organizer. MMC workshop at ESO. 12.2022. ESO Garching, Germany. 95 participants.
- Co-organizer. SDSS collaboration meeting. 06.2020. Virtual meeting hosted by NYC. 300 participants.
- Co-organizer. Alpine cosmology workshop. 07.2017, 07.2018, 07.2019. 20 participants.
- Organizer. Deep fields and mini-surveys session, LSST@europe3, 12.06.2018, Université de Lyon, France
- Organizer. SDSS-IV/eBOSS collaboration meeting in Garching (MPE) Germany, 02.2018, 80 persons.
- Co-Organizer. Calar Alto Spectroscopic Explorer kick-off meeting, 17-19.02.2016. IAA/CSIC, Granada, Spain. 30 persons.
- Co-Organizer. Dark energy and galaxy survey school. Corfu, Greece. 15-19.09.2014. 20 PhD students.
- Co-Organizer. SDSS-IV collaboration meeting. IFT/CSIC, Madrid, Spain. 20-24.07.2015. 200 persons.
- Organizer of the Cosmology Lunch Club in Madrid 2014-2017. 10 - 20 persons, twice a month.

## Skills

Languages **French**, *mother tongue*

**English**, *fluent*

**German**, *fluent*

**Spanish**, *very good*

**Italian**, *basic*

Computing **Python, Linux, slurm, LaTeX, topcat**, *fluent*

**Creation of four SDSS-IV installable packages**

**gawk, HTML, macOS, Windows**, *good*

**sql, spark, fortran, java**, *basic*

Astronomy **X-ray photometric and spectroscopic observations with eROSITA, Optical imaging and spectroscopic observations at SDSS, CFHT, DECam, VLT FORS and VIMOS, Mt Canopus**

Data reduction **Optical data (photometry and spectroscopy). X-ray eROSITA data (eSASS)**

Data base **Creation of the initial skies and universes data base** <http://skiesanduniverses.org/>

## List of conferences, seminars et workshops

131 presentations : 15 invited international conferences, 28 invited seminars, 48 international conferences, 40 workshops, 2 poster

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## 15 invited international conferences

1. X-ray emissions from the large scale structure of the Universe. 02.2023. The Multiphase Circumgalactic Medium. Ringberg, Germany.
2. The elusive hot phase of the CGM and its interplay with the AGN feedback. Invited review at MMC 2022. 12.2022 ESO Garching, Germany, hybrid meeting.
3. The cosmic web of galaxies seen in X-ray by eROSITA. IAU div J solicited talk. 08.2022 Busan, Korea hybrid meeting.
4. The cosmic web of X-ray AGNs. COSPAR solicited talk. 07.2022. Athens Greece.
5. Mapping large scale structures in X-rays: cosmological forecast. Cosmology from Home. 07.2021.
6. The cosmic web of X-ray AGNs. eROSITA collaboration meeting. 23.06.2021.
7. Results of the SPectroscopic IDentification of ERosita Sources. SDSS collaboration meeting. 06.2020.
8. Consortium Survey 5, Galaxy Cluster Redshift Survey. Preparing for 4MOST. A community workshop introducing ESO's next-generation spectroscopic survey facility. 07.05.2019. ESO, Garching, Germany
9. Sloan Digital Sky Survey IV, Extended Baryonic Oscillation Spectroscopic Survey, Emission Line Galaxies Program, Conference towards understanding emission line galaxies, 03.09.2018, Teruel, Spain
10. A holistic approach for cosmology with extra-galactic surveys. Cosmology hiking conference, 16.07.2018, Val de Vogna, Italy
11. Stellar population properties for 2 million galaxies from SDSS DR14 and DEEP2 DR4 from full spectral fitting, Frontier Research in Astrophysics - III, 30.05.2018, Mondello, Palermo, Italy
12. An extra-galactic mock for eRosita and 4MOST, Mock Durham: Galaxy formation for Surveys, 17.04.2018, Durham, United-Kingdom
13. Accurate mass function of dark matter halos, cosmology with clusters of galaxies, International Max Planck Research School on Astrophysics, 11.04.2018, MPE, MPG, Garching, Germany
14. Mapping the Universe, current and future measurements of the baryonic acoustic oscillation standard ruler, 24.07.2017, Cosmology hiking conference, Allgauer Alpen, Oberstdorf, Germany
15. Photometric and spectroscopic data for the selection of emission line galaxies, eBOSS collaboration meeting, revue ELG, 4.02.2016, EPFL, Lausanne, Switzerland

## 28 invited seminars

1. X-ray emissions from the large scale structure of the Universe with an eROSITA & 4MOST focus. Grenoble, LPSC, France, April 2023.
2. X-ray emissions from the large scale structure of the Universe. 01.2023. CRAL Lyon, France.
3. Consortium Survey 5 Galaxy Cluster Redshift Survey. Online 4MOST seminar. 11.2022.
4. The hot circum-galactic medium around galaxies at  $0.05 < z < 0.3$ . Fachbeirat. 14.06.22. MPE, Garching, Germany.
5. The cosmic web of X-ray AGNs. Cosmology Seminar MPA. 25.05.2021.
6. Full-sky photon simulation of clusters and active galactic nuclei in the soft X-rays for eROSITA. Baryon Pasting seminar. 18.11.2020
7. The final SDSS-IV/SPIDERS X-ray point source spectroscopic catalogue. Seminar at MPE high energy group kaffee runde, 01.2020, MPE, Garching, Germany
8. Simulating the eROSITA Sky. Fachbeirat. 15.06.19. MPE, Garching, Germany
9. 4MOST survey strategy. Seminar. 27.05.19. Opinas, MPE, Garching, Germany
10. Mapping the Universe. Seminar. 24.05.19. Kurt Goedel Research Center. Wien. Austria

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11. An eROSITA mock catalog of Active Galactic Nuclei and their large-scale structure. Seminar. 16.05.19. IAA, Granada, Spain
12. An eROSITA mock catalog of Active Galactic Nuclei and their large-scale structure. Seminar at MPE high energy group kaffee runde, 06.02.2019, MPE, Garching, Germany
13. An eROSITA mock catalog of Active Galactic Nuclei and their large-scale structure. Seminar. 21.01.2019. University of Helsinki. Finland
14. Near-UV spectroscopy of star-forming galaxies from eBOSS: signature of ubiquitous galactic-scale outflows, 'ESO Gas matters' seminar, 12.11.2018, ESO, Garching, Germany
15. A global approach for cosmology with extra-galactic surveys, Sternwart cosmology coffee, 26.07.2018, LMU Sternwart, Munich, Germany
16. A holistic approach for cosmology with extra-galactic surveys, 22.02.2018, ICG, Portsmouth, England
17. A holistic approach for cosmology with extra-galactic surveys, 15.12.2017, CRAL, Lyon, France
18. Stellar population properties for 2 million galaxies from SDSS DR14 and DEEP2 DR4 from full spectral fitting, MPE high energy group kaffee runde, 30.11.2017, MPE, Garching, Germany
19. Accurate halo mass and velocity functions in Planck cosmology, Sternwart Seminar, 21.06.2017, LMU, Munich, Germany
20. Accurate halo mass and velocity functions in Planck cosmology, MPE high energy group kaffee runde, 23.03.2017, MPE, Garching, Germany
21. Mapping the Universe, current and future measurements of the baryonic acoustic oscillation standard ruler, 13.05.2016, INPL, Lyon, France
22. Mapping the Universe, current and future measurements of the baryonic acoustic oscillation standard ruler, 9.02.2016, LASTRO/EPFL, Observatoire de Genève, Switzerland
23. The Low Redshift survey at Calar Alto, Lunchtime Astronomy Talk, 22.01.2016, ICC, Durham, United-Kingdom
24. Mapping the universe, current and future measurements of the baryonic acoustic oscillation standard ruler, 11.01.2016, University College London, United-Kingdom
25. Baryonic acoustic oscillations with [OII] maps, 16.10.2014, CEFCA, Teruel, Spain
26. The eBOSS and DESI projects, Seminaire, 12.06.2014, IFT/CSIC, Madrid, Spain
27. A bright and massive galaxy population at  $z=1$ , ITC CFA Seminar, 26.02.2013, Harvard-CFA, Cambridge United States
28. A search for Quasar lensing Galaxies, Seminaire du tea time, 11.2010, Laboratoire d'Astrophysique de Marseille, France

#### 48 international conferences

1. BHM-clusters an SDSS-V program. SDSS collaboration meeting. NYU, USA. July 2023.
2. The cosmic web of X-ray AGN. MMC 2022. 12.2022 ESO Garching, Germany, hybrid meeting.
3. X-ray emission around star-forming & quiescent galaxies at  $0.05 < z < 0.3$ . Athena collaboration meeting. 11.2022. Barcelona, Spain.
4. Overview of legacy survey DR10. eROSITA collaboration meeting. 10.2022. Hybrid meeting, Bamberg, Germany.
5. Overview of legacy survey DR10. 4MOST all-hands meeting. 09.22. Potsdam, Germany
6. The cosmic web of X-ray AGNs. Astronomische Gesellschaft. 09.2022. Bremen Germany.
7. The hot circum-galactic medium around galaxies at  $0.05 < z < 0.3$ . COSPAR. 07.2022. Athens Greece.
8. X-ray large scale structures: observations and simulations. 07.2022, Online meeting. Cosmology from home.

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9. Forward modelling the cosmological large scale structure seen in the X-ray by eROSITA. ESAC cluster conference. 09.2021.
10. Full-sky photon simulation of clusters and active galactic nuclei in the soft X-rays for eROSITA. NAM 2021. 07.2021.
11. Cosmology work package. eROSITA collaboration meeting. 01.2021. Virtual meeting
12. The final SDSS-IV/SPIDERS X-ray point source spectroscopic catalogue. Astronomische Gesellschaft. 09.2020
13. Simulating the (extra galactic) eROSITA sky. eROSITA collaboration meeting. 07.2020. Virtual meeting
14. SPIDERS AGN. SPIDERS collaboration meeting. 01.2020. JMU, Liverpool, UK.
15. 4MOST all-hands meeting. 16-20.09.19. Potsdam, Germany
16. An eROSITA mock catalog of Active Galactic Nuclei and their large-scale structure. Cosmo Cruise Conference. 24.08.19. Venice, Italy
17. Studying AGN clustering in the eFEDS field. HSC/eROSITA collaboration meeting. 15.05.2019. MPE Garching, Germany.
18. Simulated multi wavelength surveys of AGN and clusters. HSC/eROSITA collaboration meeting. 13.05.2019. MPE Garching, Germany.
19. An eROSITA mock catalog of Active Galactic Nuclei and their large-scale structure, The low redshift survey at calar alto. 12.03.2019, Astro-plate-III Bamberg, Germany
20. Planning 4MOST. eRosita collaboration meeting, 06.03.2019, Potsdam, Germany
21. Joint AGN-Cluster simulation on eFEDs with large scale structure. eRosita collaboration meeting, 05.03.2019, Potsdam, Germany
22. Simulations, Simput, Validation. eRosita collaboration meeting, 04.03.2019, Potsdam, Germany
23. eBOSS Galaxy science and SPIDERS clusters report, eBOSS collaboration meeting, 10.12.2018, LPNHE, Paris, France
24. New 4FS developments, 4MOST All hands meeting, 25.09.2018, Heidelberg, Germany
25. Cosmology with future spectroscopic surveys of galaxies, Societe Française d'Astronomie et Astrophysique, 04.07.2018, Bordeaux, France
26. Planning 4MOST. Downsampling and survey speed, 4MOST science meeting, 19.06.2018, Observatoire de Genève, Switzerland
27. An eRosita extragalactic mock, planning spectroscopic follow-up, eRosita collaboration meeting, 25.04.2018, MPE, MPG, Garching, Germany
28. Galaxy science working group report, eBOSS collaboration meeting, 07.02.2018, MPE/MPG, Garching, Germany
29. Virtual skies for eRosita, eRosita collaboration meeting, 17-19.07.2017, Universite d'Hamburg, Germany
30. Clustering of emission line galaxies, Conference sur les mocks de galaxies, 20.04.2016, U. Catolica, Santiago, Chile
31. The Low Redshift survey at Calar Alto, Calar Alto Spectroscopic Explorer kick-off meeting, 17.02.2016, IAA/CSIC, Granada, Spain
32. Calar Alto Spectroscopic Explorer, Encuentro RIA-SpaceTec, 12.02.2016, CSIC, Madrid, Spain
33. Mapping the universe, current and future measurements of the baryonic acoustic oscillation standard ruler, VII CPAN jornadas, 1.12.2015, Segovia, Spain
34. MultiDark lightcones for eBOSS, SDSS-IV collaboration meeting, 20-24.07.2015, IFT/CSIC, Madrid, Spain
35. The evolution of the emission line luminosity density in the Universe, SDSS-IV collaboration meeting, 20-24.07.2015, IFT/CSIC, Madrid, Spain

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36. Baryonic acoustic oscillations with emission line galaxies, eBOSS collaboration meeting, 3-6.12.2014, Apache Point Observatory, New Mexico, United States
37. Constraint on the time variation of the fine-structure constant with the SDSS-III/BOSS DR12 QSO sample, BOSS collaboration meeting, 3-6.12.2014, Apache Point Observatory, New Mexico, United States
38. The  $[O_{II}]$  luminosity function, SDSS-IV collaboration meeting, 27.07-03.08 2014, University of Utah, United States
39. Future dark energy surveys, Multidark collaboration meeting, 2-4.04.2014, IFIC/CSIC, Valencia, Spain
40. ELG classification and redshifting with BOSS, expectations for eBOSS, eBOSS collaboration meeting, 10-12.12.2012, CMU, Pittsburgh, United States
41. ELG selection for eBOSS, Three scenarii, eBOSS collaboration meeting, 10-12.12.2012, CMU, Pittsburgh, United States
42. Properties of faint emission line galaxies observed by BOSS, BOSS collaboration meeting, 10-12.12.2012, CMU, Pittsburgh, United States
43. Galaxy bias and BAO tracers, a joint clustering weak-lensing analysis, BOSS collaboration meeting, 10-12.12.2012, CMU, Pittsburgh, United States
44. Emission Line Galaxies observed by VLT on COSMOS field,  $[O II]$  luminosity function at  $z = 1.2$  and  $z = 1.4$ , BigBOSS collaboration meeting, 8-11.10.2012, APC, Paris, France
45. What galaxy bias for current and future BAO surveys ?, CosmoBias conference, 22-25.05.2012, Laboratoire d'Astrophysique de Marseille, France
46. Ancillary Science, Emission Line Galaxies and linear bias, BOSS collaboration meeting, 4-6.01.2012, New York University, United States
47. Ancillary program, bright emission line galaxies, BOSS collaboration meeting, 24-26.03.2011, Apache Point Observatory, New Mexico, United States
48. Combining BOSS and CFHT to measure the galaxy bias, BOSS collaboration meeting, 16-18.09.2010, APC, Paris, France

#### 40 workshops

1. AGN clustering with eRASS. eROSITA AGN face to face meeting, April 2023, MPE, Germany.
2. eROSITA cluster face-2-face meeting. Overview of the spectroscopic follow-up (4MOST, SDSS-V), updates on simulations. 03.2023 Hybrid meeting.
3. The cosmic web of X-ray AGN. Australian + eROSITA workshop, March 2023, online meeting.
4. eROSITA cluster face-2-face meeting. Overview of the cosmology WP, updates on Simulations. 07.2022 Hybrid meeting.
5. eROSITA cluster face-2-face meeting. SDSS-V and 4MOST Spectroscopic Follow-up. 07.2022 Hybrid meeting.
6. eROSITA cluster face-2-face meeting. eROMapper Photometric/Spectroscopic Redshifts, optical Selection function. 07.2022 Hybrid meeting.
7. The hot circum-galactic medium around galaxies with Athena. 06.2022, Munich. MPE high energy group staff retreat.
8. X-ray large scale structures: observations and simulations. 05.2022, Garching, Germany. MIAPP, Advances in Cosmology through Numerical simulations.
9. eROSITA cluster face-2-face meeting. Cosmology work package. 01.2022 Virtual meeting.
10. eROSITA cluster face-2-face meeting. Spectroscopic follow-up. 01.2022 Virtual meeting.
11. eROSITA cluster face-2-face meeting. Cosmology work package. 06.2021 Virtual meeting.
12. eROSITA cluster face-2-face meeting. Spectroscopic follow-up. 06.2021 Virtual meeting.

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13. Measuring galaxy cluster redshifts with the AAO/AAT infrastructure. 02.2021. eROSITA AAL virtual workshop.
14. eROSITA cluster face-2-face meeting. Cosmology work package. 11.2020 Virtual meeting
15. eROSITA cluster face-2-face meeting. Simulations. 11.2020 Virtual meeting
16. The final SDSS-IV/SPIDERS X-ray point source spectroscopic catalogue. German astronomical society. 09.2020. Virtual meeting
17. 4MOST community workshop. What community PIs need to provide: target catalogues, templates, FoM, SSC. 07.2020, Virtual meeting
18. eROSITA AGN face-2-face meeting. Angular clustering analysis of eFEDs. 07.2020 Virtual meeting
19. eROSITA cluster face-2-face meeting. Cosmology work package. 07.2020 Virtual meeting
20. eROSITA AGN face-2-face meeting. Angular clustering analysis of eFEDs. 02.2020 MPE, Garching, Germany
21. eROSITA cluster face-2-face meeting. Cosmology work package. 02.2020 LMU, Munich, Germany
22. eROSITA AGN face-2-face meeting. Clustering. 04.07.19 MPE, Garching, Germany
23. eROSITA cluster face-2-face meeting. Cosmology work package. 02.07.19 MPE, Garching, Germany
24. SDSS-IV/SPIDERS workshop. SPIDERS DR16. 21.05.2019. IRAP. Toulouse. France
25. SDSS-IV/SPIDERS workshop. Update about SPIDERS and eBOSS. 20.01.2019. Helsinki. Finland
26. eROSITA/HSC collaboration, eRosita Ringberg workshop, 22.10.2018, Ringberg, Germany
27. Cosmology with eRosita in 2025+, SDSS-V workshop, 06.02.2018, MPE/MPG, Garching, Germany
28. Virtual skies for eRosita, eRosita cluster working group meeting, 27-28.11.2017, MPIA/AiFA, Bonn, Germany
29. Planning 4MOST, 4MOST survey planning workshop : sprint 2, 23.11.2017, MPE, Garching, Germany
30. Stellar population properties for 2 million galaxies from SDSS DR14 and DEEP2 DR4 from full spectral fitting, Granada cosmology workshop, 21.11.2017, IAA/CSIC, Granada, Spain
31. Virtual skies for eRosita, MPE high energy group retreat, 8-10.05.2017, Bamberg Castle, Germany
32. Accurate halo mass and velocity functions in Planck cosmology, eRosita cluster working group meeting, 13-14.03.2017, LMU, Munich, Germany
33. Calar Alto Spectroscopic Explorer, Calar Alto Instrumentation workshop, 13.10.2016, IAA/CSIC, Granada, Spain
34. Mapping and mocking the large scale structure of the universe with emission line galaxies, MultiDark Galaxies Workshop, 26-30.09.2016, Universidad de La Plata, Argentina
35. ELG redshift with eBOSS, eBOSS workshop, 13-15.03.2014, New York University, United States
36. Logic and relativity, a different mathematical approach, Logic and relativity workshop, 16-18.10.2013, CPPM, Marseille, France
37. ELG selection for eBOSS, current observations and future plans, eBOSS target selection work .2013, Observatoire de Genève, Switzerland
38. ELG redshift, [OII] doublet and resolution, requirements for eBOSS and BigBOSS, Workshop on spectrograph design for eBOSS and DESI, 5.12.2012, CRAL, Lyon, France
39. Emission line galaxies, observation, BigBOSS workshop, 16-20.07.2012, LBNL, Berkeley, California, United States
40. Emission line galaxy target selection, BigBOSS workshop, 06.2011, LBNL, Berkeley, California, United States

## 2 Posters

1. The final SDSS-IV/SPIDERS X-ray point source spectroscopic catalogue. EAS 2021, S10.

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2. The large-scale structure traced by simulated eROSITA AGN and Clusters. EAS 2021, S3.

## Software

- 20 public repositories: <https://github.com/JohanComparat/> (0 active)
- 19 private repositories <https://gitlab.mpcdf.mpg.de/joco> (14 active)
- Until 2022. Owner and organizer of the eROSITA cosmology github repository with 33 (12) repositories (under active development). <https://github.com/ygolomsochtiwsretsulc>
- Virtual skies, first eROSITA digital twins (Comparat et al. 2019, 2020b),  
[https://gitlab.mpcdf.mpg.de/joco/lss\\_mock\\_dev/](https://gitlab.mpcdf.mpg.de/joco/lss_mock_dev/)
- N-body simulations exploitation (Comparat et al. 2017a),  
<https://github.com/JohanComparat/nbody-npt-functions>
- stellar population models (Comparat et al. 2017b),  
<https://github.com/FireflySpectra/exploitation> [https://github.com/JohanComparat/firefly\\_explore](https://github.com/JohanComparat/firefly_explore)
- Luminosity functions and emission line measurements (Comparat et al. 2015, 2016),  
<https://github.com/JohanComparat/pySU>
- Archetype and template spectra construction,  
<https://github.com/JohanComparat/archetypes>  
[https://github.com/JohanComparat/qmost\\_templates](https://github.com/JohanComparat/qmost_templates)

## Data

- Participated more than 10 value added catalogues in SDSS  
[https://www.sdss.org/dr18/data\\_access/value-added-catalogs/](https://www.sdss.org/dr18/data_access/value-added-catalogs/)
- Initial developer of the data base *skies and universes*. Now migrated to  
<http://skiesanduniverses.iaa.es/>
- 2.5 millions stellar population models, 2.3To,  
<http://www.sdss.org/dr16/spectro/eboss-firefly-value-added-catalog/>,  
<https://firefly.mpe.mpg.de/>
- Catalog of  $\sim 255,000$  eBOSS/ELG targets, 16Mo,  
<http://www.sdss.org/dr14/algorithms/eboss-target-selection/eboss-elg-target-selection>
- eROSITA eRASS:1 digital twin, 180 million events, about 10 GB.  
<https://cdsarc.cds.unistra.fr/viz-bin/cat/J/A+A/665/A78#/browse>