Curriculum Vitae Sergio Simón-Díaz (last updated on May 2023)

1. Personalia

Name:	Sergio Simón Díaz
Date and place of birth:	19/06/1977, Madrid (Spain)
Work Address:	Instituto de Astrofísica de Canarias c/ Vía Láctea s/n E-38200, La Laguna, Tenerife Spain
E-mail:	ssimon@iac.es
Webpage:	http://research.iac.es/proyecto/iacob
Marital Status	Married since 2013
One child:	Born in 2012

2. Studies

2.1. Bachelor and Master Studies: October 1995 – June 2000

10/1995 – 06/2000: Bachelor studies (Physics/Astrophysics, Universidad Complutense de Madrid, Spain).
10/2000 – 03/2002: Master studies (Astrophysics, Universidad de La Laguna, Tenerife, Spain).

2.2. PhD Studies: October 2000 – December 2005

10/2000 – 12/2005: PhD student (Astrophysics. Universidad de La Laguna, Tenerife, Spain).

12/2005: Public PhD thesis defence – Cum Laude (Universidad de La Laguna, Spain).
Title of the PhD thesis: *"Interplay between massive stars and the interstellar medium in Galactic HII regions"*, Supervisors: Prof. Artemio Herrero & Dr. César Esteban.

2.3. Personal Training after PhD

2021: Online course (25h) on *"Group management and leadership"* delivered by UNIKEMIA
2020: Online course (25h) on *"Project management"* delivered by UNIKEMIA
2013: Participation in the (1 full day) tutorial on *"How to survive from PhD to tenure track"* held in Brussels after the International Francqui Symposium *"What asteroseismology has to offer to astrophysics"* organized by the KU Leuven and the University Foundation.
2006: Participation as junior postdoc in the XVIII Canary Islands winter school of astrophysics *"The emission line Universe"* (40h) organized by the Instituto de Astrofísica de Canarias.
2001: Participation as PhD student in the XVIII Canary Islands winter school of astrophysics *"Cosmochemistry, the melting pot of the elements"* (40h) organized by the Instituto de Astrofísica de Canarias.

3. Job Positions

3.1. Current position and duties

- At the Instituto de Astrofísica de Canarias (IAC), Spain:

2018 – now: **Staff researcher (Investigador distinguido).**

2022 – now: Member of the IAC research commission.
2018 – now: Member of the steering committee of the IAC Severo Ochoa project (awarded with 4M€ by the Spanish Ministry for Science and Innovation. Representative of the IAC research line "Physics of stars and the Interstellar medium" (comprising 50 researchers).
2016 – now: **Head of the research group** *"Physical properties and evolution of massive stars"* (the group presently comprises 3 staff members, 3 postdocs, 3 PhD students and 3 BSc/MSc students).

- Elsewhere:

2022 – now: Science coordinator of the Stellar Oscillation Network Group (SONG).

2022 – now: Co-leader (together with N. Castro, AIP, Germany) of the 4MIDABLE-LR-OBstar sub survey. 4MIDABLE is one of the various 4MOST consortium surveys.
2019 – now: Leader of the working group on "Physics of OB stars" WEAVE/SCIP (Stellar, circumstellar, Interstellar Physics) survey, led by Prof. J. Drew, UCL, UK.

3.2. Past positions and duties elsewhere

2013 – 2018: Severo Ochoa Advanced fellow (IAC, Spain).
2008 – 2013: Postdoctoral researcher (IAC, Spain).
2007 – 2008: MEC/Fulbright postdoctoral fellow (Observatoire de Genève, Switzerland).
2006 – 2007: MEC/Fulbright postdoctoral fellow (Observatoire de Paris-Meudon, France).
2004 – 2005: Support Astronomer (Isaac Newton Group of Telescopes, Spain).
2000 – 2004: PhD student (Resident Astrophysicist, IAC/ULL, Spain).

4. Scientific Prizes and Awards

2008: Support by the Societé Suisse d'Astrophysics et d'astronomie for Young Scientists to attend to the IAUS250 in Kauai (USA, 830€).
2006: Postdoctoral grant (~55 k€, 2 years) awarded by the Spanish Ministry of Education and Science to develop the research project *"HII regions to reveal stellar properties"* at the Observatoire de Paris/Meudon (France) and the Observatoire de Geneve (Switzerland) in collaboration with Dr. Grazyna Stasinska and Dr. Daniel Schaerer, respectively.
2000: PhD research grant (~75 k€, 4 years) awarded by the Instituto de Astrofísica de Canarias.

5. Research interests and brief summary of research career

My research interests are focused in the study of the **physical properties and evolution of massive stars**. My skills cover a broad range of competences in these topics, ranging from observations to theory, passing through modelling and analysis aspects, and including the ability to design and implement successful observing campaigns, as well as versatile tools for the quantitative spectroscopic analysis of large samples of OB stars.

Keywords: Stellar Astrophysics – massive OB-type stars – quantitative spectroscopy – stellar parameters and abundances – spectroscopic surveys: IACOB, VFTS, GES, WEAVE, 4MOST – spectroscopic databases – optical spectroscopy – stellar evolution – rotational velocities – stellar oscillations and spectroscopic variability – massive binaries – young stellar clusters and associations – stellar atmosphere models – atomic models – application of machine learning techniques to stellar astrophysics – exploitation of astrometric and photometric data from the Gaia and TESS space missions – Galaxies: Milky Way and the Large Magellanic Cloud – HII regions: physical properties and nebular abundances.

After my PhD as Resident Astrophysicist at the IAC, and working as Support Astronomer at the ING for one year, I was awarded funding by the Spanish MEC/Fulbright program to lead the project ***HII regions to reveal stellar properties*** during a 1+1 year stay at the Meudon and Geneva observatories, respectively. After that, I spent 5 years on 2 postdoctoral positions at the IAC, where I took the lead of the Spanish participation in the ***VLT-FLAMES Tarantula Survey*** one of the most important and productive international collaborations in the field of massive stars. I also started building the ***IACOB project***, an ambitious long-term project aimed at providing an unprecedented empirical overview of the physical properties of Galactic OB-type stars which could be used as long-standing anchor point for our theories of stellar atmospheres, winds, interiors and evolution of massive stars. This innovative project allowed me to be awarded in 2013 one Severo Ochoa Advanced fellowship at the IAC where later, in 2018, I became permanent staff researcher. In parallel, my strong commitment to several international projects over the last 20 years, reinforced by many visits to different institutions in Europe and America (Spain, France, Germany, Belgium, UK, Mexico, Switzerland, Netherlands, USA, Chile, and Argentina), has allow me to consolidate a network of collaborations with world-leading researchers in the field of massive stars. At present, I do not only continue leading the IACOB project, but I am also ***head of the Massive Stars group*** at the IAC (3 staffs, 3 postdocs, 4 students), coordinator of the working group on physical parameters and evolution of massive OB stars within the ***WEAVE-SCIP Survey***, co-leader of the ***4MIDABLE-LR-OBstar Survey***, science coordinator of the ***SONG network***, and elected member of the ***IAU G2 commission*** of massive stars.

6. Nine most important publications with leading role by S. Simón-Díaz

For the full list of publications, we refer to Section 17
Information about the number of citations was obtained from ADS (http://adsabs.harvard.edu) in April 2023

1. **Simón-Díaz, S.**, & Herrero, A. (2007, A&A, 468, 1063. **162 citations**)
   Fourier method of determining the rotational velocities in OB stars.

   First systematic investigation of the applicability of the Fourier transform method to obtain estimates of projected rotational velocities in OB stars. This method, proposed long time ago by J. A. Carroll and popularized by D. F. Gray in the case of solar type stars, had never been systematically (and successfully) applied to O-type stars and B supergiants. This paper showed the utility of this powerful methodology to disentangling the effect of stellar rotation from other sources of line-broadening also in this type of stars, hence opening a new research window to obtain actual measurements of this quantity in OB stars.

2. **Simón-Díaz, S.**, & Herrero, A. (2014, A&A, 562, A135. **204 citations**)
   The IACOB project. I. Rotational velocities in northern Galactic O- and early B-type stars revisited. The impact of other sources of line-broadening.

   By applying the Fourier Transform (FT) technique to a sample about 200 Galactic OB stars (for which we had gathered high-quality spectra with FIES@NOT2.56m and HERMES@Mercator1.2m), we could obtain first reliable measurements of the projected rotational velocities (*v*sin*i*) in a large sample of high-mass OB-type stars. In addition, it made possible to disentangling and measuring from the profile (using a goodness-of-fit technique, GOF) the so-called macroturbulent in massive OB stars, a spectroscopic feature that was proven to be ubiquitous in the O star and B supergiant domains. We also showed that previous *v*sin*i* estimates in this type of stars, in which the effect of the rotational a macroturbulent broadening were not adequately disentangled, needed to be systematically reviewed downward by 20 – 50%.

3. Ramírez-Agudelo, O. H., **Simón-Díaz, S.**, et al. (2013, A&A, 560, A29. **174 citations**)
   The VLT-FLAMES Tarantula Survey. XII. Rotational velocities of the single O-type stars.

   In the context of the VLT-FLAMES Tarantula survey (VFTS) collaboration, we investigated the spin properties of a sample of ~220 presumably single O-type stars in the 30 Doradus region of the Large Magellanic Cloud, which is commonly considered as the nearest starburst region. This paper laid the foundations for a better understanding of the outcome of the massive star formation process regarding the distribution of amount of angular momentum of individual stars, as well as the potential effect of binary evolution on the rotational properties of the individual components in a binary system.

4. Holgado, G., **Simón-Díaz, S.**, et al. (2022, A&A, 665, A150. **10 citations in its first 7 months**)
   The IACOB project. VII. The rotational properties of Galactic massive O-type stars revisited

   This paper resulted as an outcome of the PhD thesis of the first PhD student of the IACOB project. In particular, we presented *v*sin*i* estimates for a sample of about 300 Galactic O-type stars for which the IACOB and OWN surveys had gathered multi-epoch observations. We provided *v*sin*i* distributions for the whole sample, as well as for several subsamples extracted from it considering their spectroscopic binary status, their mass and their location along the main sequence. We provided empirical evidence supporting the scenario proposed by de Mink et al. in which the tail of fast rotators is mainly produced by binary interactions. We also notice little rotational braking during the main sequence, suggesting the existence of efficient angular momentum transport mechanisms in the interior of main sequence stars with masses in the range 20-80 M_{sol}.

5. **Simón-Díaz, S.**, Herrero, A., et al. (2010, ApJ Letters, 720, L174. **78 citations**)
   Observational evidence for a correlation between macroturbulent broadening and line-profile variability in OB supergiants

   In this letter to ApJ, we presented first encouraging results of a long-term observational project aimed at investigating the macroturbulent broadening in O and B supergiants and its possible connection with spectroscopic variability phenomena and stellar oscillations. In particular, we presented firm observational evidence for a strong correlation between the extra-broadening and photospheric line-profile variations in a sample of 13 blue massive supergiants.

6. **Simón-Díaz, S.**, Godart, M., et al. (2017, A&A, 597, A22. **91 citations**)
The IACOB project. III. New observational clues to understand macroturbulent broadening in massive O- and B-type stars.

   After extending the number of stars surveyed by the IACOB project to more than 400, and ensuring an adequate and statistically significant coverage of the full OB star domain, we applied our combined FT+GOF technique to all the gathered high-quality spectra of stars not detected as double line spectroscopic binaries. The detailed quantitative spectroscopic analysis of this sample of allowed us to provide new empirical clues to understand macroturbulent broadening in OB stars. The results presented in this paper have become a useful and reliable anchor point for further theoretical investigations about the proposed physical origin of this ubiquitous line-broadening in the OB star domain. Some of the proposed mechanisms, including heat-driven g-mode pulsations and gravity waves originated in sub-surface convection layers were already explored in this paper.

7. Burssens, S., **Simón-Díaz, S.**, Bowman, D. M., et al. (2020, A&A, 639, A81. **57 citations**)
Variability of OB stars from TESS southern Sectors 1-13 and high-resolution IACOB and OWN spectroscopy.

   This was a pilot study in which we coupled for the first time high-precision long term continuous photometric data provided by the TESS space mission with ground base spectroscopy gathered by the IACOB and OWN surveys. We aimed at studying photometric variability in the OB star domain in two dimensions: mass and evolution. By considering a first sample of 98 OB-type stars, we could deduce the diverse origins of the mmag-level variability found in all investigated stars, including heat-driven p- and g- and hybrid mode pulsators, eclipsing binaries, stochastic low frequency pulsators, high frequency modes in a Be star, and potential heat-driven pulsations in two Oe stars. We also identified among the sample several stars of interest for future asteroseismic modelling.

8. Holgado, G., **Simón-Díaz, S.**, et al. (2020 A&A, 638, A157. **27 citations**)
The IACOB project. VI. On the elusive detection of massive O-type stars close to the ZAMS.

   We performed a comprehensive empirical study of a topic widely discussed in the past 40 yrs: the apparent lack of massive O-type stars near the ZAMS (at ages <2 Myr). Different explanations had been proposed from the observational and theoretical side, but no firm conclusions had been reached yet. To this aim, we benefitted from the high-quality spectroscopic observations of (more than 400) Galactic O-type stars gathered by the IACOB and OWN surveys and used T_{eff} and log estimates to locate the sample in the spectroscopic HR diagram (sHRD). We found that the apparent lack of stars near the ZAMS with masses in the range between 30 and 70 M_{sol} still persist when results from a large non-biased sample of stars are considered, and propose that an adjustment of the mass accretion rate towards lower values than canonically assumed might reconcile the hotter boundary of the empirical distribution of optically detected O-type stars in the sHRD and the theoretical birthline for stars with masses above 30 M_{sol}.

9. **Simón-Díaz, S.** (2010, A&A, 510, A22. **74 citations**)
The chemical composition of the Orion star forming region. I. Homogeneity of O and Si abundances in B-type stars

   I performed a detailed, self-consistent spectroscopic abundance analysis of a sample of 13 early B-type stars located in the Orion OB1 association by means of the stellar atmosphere code FASTWIND. I wanted to investigate whether the inhomogeneity of O and Si abundances previously found in these stars was real (hence a signature of enrichment of the newly formed stars in an induced star formation scenario) or a consequence of intrinsic error induced by the use of photometric indices to establish the stellar parameters prior to the abundance analysis. This was indeed the case, since I detected systematic errors in the stellar parameters determined previously which were importantly affecting the derived abundances. Once these errors were corrected, I found a high degree of homogeneity in the O and Si abundances for stars in the various Ori OB1 subgroups. I also found that the derived abundances were in very good agreement with recent determinations of other B-type stars in the solar vicinity.

7. Membership to scientific organizations

Member of the Spanish Astronomical Society (SEA), the International Astronomical Union (IAU), and the European Astronomical Society (EAS).

8. Peer-Reviewed Funding ID

8.1. Ongoing peer-reviewed funding ID as prime investigator

09/2022 - 08/2025: *The Multiple Early Channels of Evolution of Massive Stars*
PID2021_122397NB-C21 – Spanish MICINN – 193.8 k€
IPs. Prof. A. Herrero & Dr. **S. Simón-Díaz** (IAC)

01/2020 – 04/2023: *Solving the longstanding mystery of the massive blue Supergiants*
ProID2020010016 – GobCan-ASICII
IP. Dr. **S. Simón-Díaz** (IAC)

8.2. Past peer-reviewed funding ID as prime investigator

01/2019 – 08/2022: *Linking bIrth and death: an Empirical approach To lumInous blue Massive star Evolution*
PGC2018-093741-B-C22 – Spanish MICINN – 157.3 k€
IPs. Dr. **S. Simón-Díaz** & Prof. A. Herrero (IAC).

02/2012 – 06/2012: Complementary action to help in the organization of the international workshop *"Mapping oxygen in the Universe"*
Spanish MEC – 5.4 k€
IP: Dr. **S. Simón-Díaz** (IAC)

07/2006 – 06/2008: Postdoctoral grant to develop the research project *"HII regions to reveal stellar properties"* in the Observatoire de Paris/Meudon and the Observatoire de Genève.
Spanish MEC/Fulbright programme – 55k€
IP: Dr. **S. Simón-Díaz**

8.3. Participation in other funding ID projects

01/2023 – 12/2024: *Spanish network for the scientific exploitation of Gaia*
RED2022-134612-T – Spanish MICINN – 20.6 k€
IP. Prof. X. Luri (Universidad de Barcelona)
Participation status: ***Research group member***

06/2022 – 05/2025: *Herramientas de Inteligencia Artificial para estrellas masivas y WEAVE*
Generalitat Valenciana – 299 k€
IP. Prof. I. Negueruela (Universidad de Alicante)
Participation status: ***Research group member***

01/2019 – 12/2022: *ASTRO+: design, implementation, and exploitation of the largest high-mass star database*
PROMETEO/2019/041 - Conselleria de Educacion, investigacion, cultura y deporte – 250 k€
IP. Prof. A. Marco (Universidad de Alicante)
Participation status: ***External collaborator***

01/2020 – 12/2024: *Excelencia Severo Ochoa programme*
CEX2019-000920-S – Spanish MICINN – 4 M€
IP. Prof. R. Rebolo (IAC)
Participation status: ***Research group member and representative of the IAC research line on Physics of the Stars and the Interstellar Medium***

01/2017 – 12/2019: *Seismology of bright stars with SONG and TESS*
AYA2016-76378-P – Spanish MICINN – 49 k€
IP. Dr. P.L. Pallé (IAC)
Participation status: ***Research group member and chair of the SONG-TAC***

01/2016 – 12/2018: *Massive stars in the Local Universe*
AYA2015-68012-C2-1-P – MICINN – 201 k€
IP. Prof. A. Herrero (IAC)
Participation status: ***Research group member***

01/2016 – 12/2021: *ERC AdG2014 MAMSIE: Mixing and Angular Momentum Transport of Massive Stars*
European Research Council – 2.49 M€
IP. Prof. C. Aerts
Participation status: ***External collaborator***

01/2016 – 12/2019: *Excelencia Severo Ochoa programme*
CEX2015-0548 – Spanish MICINN – 4 M€
IP. Prof. R. Rebolo (IAC)
Participation status: ***Severo Ochoa Advanced fellow***

01/2013 – 12/2015: *Physics and evolution of massive stars in the Local Group*
AYA2012-39364-C02-01 – MICINN – 167 k€
IP. Prof. A. Herrero (IAC)
Participation status: ***Postdoctoral fellow***

01/2011 – 12/2013: *Massive star population in the Local Group*
ProID20100119 – GobCan – 30 k€
IP. Prof. A. Herrero
Participation status: ***Research group member***

01/2011 – 12/2012: *The IAC contribution to the mid and far IR space missions and to the scientific multiwavelenght exploitation*
AYA2010-21697-C05-04 – MICINN – 414 k€
IP. Dr. Ismael Pérez Fournón
Participation status: ***Postdoctoral fellow***

01/2009 – 12/2013: *ERC AdG2008 PROSPERITY: Probing Stellar Physics and Testing Stellar Evolution through Asteroseismology*
European Research Council – 2.41 M€
IP. Prof. C. Aerts
Participation status: ***External collaborator***

01/2009 – 12/2011: *Massive stars and clusters in multiwavelenght and contribution to SPICA*
AYA2008-06166-C03-01– Spanish MEC – 138 k€
IP. Prof. A. Herrero
Participation status: ***Postdoctoral fellow***

01/2007 – 12/2009: *Structure, chemical composition and early evolution of HII regions*
AYA2007-63030 – Spanish MEC – 62 k€
IP. Dr. C. Esteban
Participation status: ***Research group member***

01/2011 – 12/2013: *First light with GTC: Spanish astronomy at the cutting-edge of European astronomy*
CSD2006-00070 – Spanish MEC – 5.5 M€
IP. Dr. Jose Miguel Rodriguez Espinosa
Participation status: ***Research group member***

01/2005 – 03/2008: *Massive stars in the optical and UV up to 5 Mpc*
AYA2004-08271-C02-01 – Spanish MEC – 218 k€
IP. Prof. A. Herrero
Participation status: ***External collaborator***

01/2002 – 12/2004: *Chemical evolution of the Local Group*
AYA2001-0436– Spanish MCYT – 72 k€
IP. Prof. A. Herrero
Participation status: ***Research group member (PhD student)***

9. Membership of Scientific Advisory Bodies or Committees

9.1. International functions and responsibilities

2023 – now: Coordinator of the IAU-G2 online conference series.
2022 – now: Co-leader (together with N. Castro, AIP, Germany) of the *4MIDABLE-LR-OBstar* subsurvey. *4MIDABLE-LR* is one of the various *4MOST* consortium surveys (PIs. Dr. C. Chiappini & Dr. I. Minchev).
2022 – now: Elected member of the *IAU-G2 commission on Massive stars*.
2022 – now: Chair of the *"Galaxies and Stars panel"* of Spanish Time Allocation Committee of the night telescopes of the Canary Islands observatories.
2022 – now: Science coordinator of the *Stellar Oscillation Network Group* (SONG).
2019 – now: Member of the steering committee of the *WEAVE/SCIP* (Stellar, circumstellar, Interstellar Physics) survey, led by Prof. J. Drew (UCL, UK).

2014 – 2015: Member of the *ESO* Time Allocation Committee (P93 – panellist, P94 – panel chair).
2008 – 2018: Coordinator of the Spanish participation and active researcher on quantitative spectroscopy of OB stars within the ESO Large Programme and international consortium *VLT-FLAMES Tarantula Survey* (VFTS, PI. C. Evans, UK).

- External referee of observing proposals to OPTICON and CFHT
- External referee of two international research project proposals MECT-Argentina.
- Referee of about 40 international publications in A&A, ApJ, MNRAS, CoAst, BBAA.

9.2. Supervision of PhD/MSc/BSc research

- Ongoing PhD/MSc/BSc/internships as supervisor:

  2022 – present: PhD research by Carlos Martínez Sebastián (ULL/IAC)
  "A massive empirical approach to stellar evolution with IACOB, WEAVE and Gaia".
  2019 – present: PhD research by Abel de Burgos (ULL/IAC)
  "On the evolutionary nature of massive B-type supergiants: a modern empirical reappraisal using data from IACOB, Gaia and TESS".

  2022 – present: MSc research by Alba Casasbuenas (ULL)
  "Getting ready for the massive spectroscopic analysis of Galactic B supergiants: Machine learning vs. traditional techniques".
  2022 – present: BSc research by Carlota Méndez (ULL)
  "A 2D extinction map of the thin disc of the Milky Way as revealed by the O stars and B supergiants surveyed by the IACOB project".

- Finished PhD/MSc/BSc theses:

  2014 – 2019: PhD research by Gonzalo Holgado (ULL/IAC)
  "Spectroscopic and physical characterization of the Galactic O-type stars surveyed by the IACOB and OWN surveys".
  2009 – 2014: PhD research by Carolina Sabín-Sanjulian (ULL/IAC)
  "Quantitative spectroscopic analysis of the O-type stars in the 30 Doradus region of the LMC". PhD thesis developed in the framework of the VFTS international collaboration.

  2021 – 2022: MSc research by Alejandro Santos (ULL)
  "Empirical assessment of proposed mechanisms to explain the presence of CNO processed material in the surface of slow rotating massive stars".
  2020 – 2021: MSc research by Claudio Cuervo (ULL)
  "Stellar parameter inference in Galactic O-type stars using evolutionary model computations and Neural Networks".
  2020 – 2021: BSc research by Jose Andrés Avellaneda (ULL)
  "A pilot study to test the reliability of OII model atoms with stellar spectroscopy".
  2018 – 2019: MSc research by Enrique García (ULL)
  "Oxygen and silicon abundances in early B-type stars of the solar vicinity surveyed by the IACOB project".

2018 – 2019: MSc research by Carolina Sabín-Sanjulian (ULL)
"O-type stars in 30 Doradus".

9.3. Membership of PhD/MSc/BSc committees, not as supervisor

2018 – now: Jury member of the PhD thesis of Alfredo Sota (UAM, Madrid, Spain), Maria del Mar Rubio (UAM, Madrid, Spain), Laura Toribio (ULL, Tenerife, Spain) and Sara Berlanas (ULL, Tenerife, Spain).
2009 – now: Jury member of the MSc thesis of Aitami Navarro Jurado (ULL, Tenerife, Spain), Miguel Rodriguez (ULL, Tenerife, Spain) and James Barron (Queens University, Canada).

10. Scientific Work Visits Abroad

- Scientific work visits abroad longer than one week:

2023: Participant in the **advanced research programme** of the Munich Institute for Astrophysics and Particle Physics (MIAPP, Germany). Participation in the workshop *"Stellar Astrophysics in the Era of Gaia, Spectroscopic, and Asteroseismic Surveys"* (host: Prof. R. Kudritzki, 2 weeks) + **invited talk**.
2023: **Invited visiting work stay** at the Observatoire de Genève (Switzerland). Collaboration with the ObsGe group on stellar evolution (hosts: Prof. G. Meynet and Dr. Sylvia Ekström, 2 weeks) + **invited seminar**.
2021: Visiting work stay at the University of Innsbruck (Austria). Quantitative spectroscopy of Galactic B supergiants (host: Dr. M.A. Urbaneja, 2 weeks).
2019: Visiting work stay at the Stellar Astrophysics Center of the Aarhus University (Denmark). Reinforcing the IACOB/SONG collaboration (host: Dr. F. Grundhal, 2 weeks) + **invited seminar**.
2018: Participant in the **advanced research programme** of the Munich Institute for Astrophysics and Particle Physics (MIAPP, Germany). Participation in the workshop *"The Chemical Evolution of Galaxies"* (host: Prof. R. Kudritzki, 2 weeks) + **invited talk**.
2017: **Invited visiting work stay** at the Universidad de La Plata (Argentina). Reinforcement of the IACOB/OWN collaboration (host: Dr. R. Gamen, 2 weeks) + **invited seminar** + **crash course** (6h) on Quantitative spectroscopy of massive O and B-type stars.
2015: **Invited visiting work stay** at the Universidad de La Serena (Chile). Reinforcement of the IACOB/OWN collaboration (host: Dr. R. Barbá, 4 weeks) + **crash course** (6h) on Quantitative spectroscopy of massive O and B-type stars.
2014: **Invited visiting work stay** at the Observatoire de Genève (Switzerland). Collaboration with the ObsGe group on stellar evolution (hosts: Prof. G. Meynet and Dr. Sylvia Ekström, 2 weeks) + **invited seminar**.
2014: **Invited visiting work stay** at the KU Leuven (Belgium). Reinforcement of the IACOB/PROSPERITY collaboration (host: Prof. C. Aerts, 2 weeks).
2013: **Invited visiting work stay** at the Universidad de La Serena (Chile). Reinforcement of the IACOB/OWN collaboration (host: Dr. R. Barbá, 4 weeks).
2013: Visiting work stay at the Universitäts-Sternwarte München (Germany). Development of semi-automatized quantitative spectroscopic analysis tools for O-type stars (host: Dr. J. Puls, 4 weeks).
2011: **Invited visiting work stay** at the KU Leuven (Belgium). The macroturbulent broadening – pulsation connection (host: Prof. C. Aerts, 4 weeks) + **invited seminar**.
2011: Visiting work stay at the Dr. Karl Remeis-Sternwarte Bamberg (Germany). Surface abundance determination in B-type stars through high-resolution spectroscopy (host: Dr. N. Przybilla, 2 weeks) + **invited seminar**.
2008: **Invited visiting work stay** at the Universidad Nacional Autónoma de México (Mexico). Photomodelling of HII regions (hosts: Dr. C. Morisset and J. García-Rojas, 4 weeks) + **invited seminar**.
2007: **Long-term postdoctoral stay** at the Observatoire de Genève (Switzerland) awarded by the Spanish Ministry of Education and Science. HII regions to reveal stellar properties (host: Prof. D. Schaerer, 1 year).
2006: **Invited visiting work stay** at the Universidad Nacional Autónoma de México (Mexico). Photomodelling of HII regions (host: Dr. C. Morisset, 4 weeks) + **invited seminar**.

2006: **Long-term postdoctoral stay** at Observatorie de Paris – Site de Meudon (France) awarded by the Spanish Ministry of Education and Science. HII regions to reveal stellar properties (host: Dr. G. Stasinska, 1 year).

2004: **Long-term PhD stay** at the Isaac Newton Group of Telescopes (La Palma, Spain) awarded by PPAC (UK). Support Astronomer of the Isaac Newton Telescope (host: Dr. D. Lennon, 11 months).

- Some 25 scientific work visits more to foreign institutes and universities, ranging from two days up to one weeks each, in numerous European countries (Spain, France, Belgium, Germany, the Netherlands, Denmark, UK, Poland, Italy, Austria), the USA, Chile, México and Argentina.

11. Invited Seminars and Talks

1. Invited seminar: "Mind the gaps: a massive empirical approach to high-mass evolution (with the aid of IACOB, WEAVE, Gaia and TESS" (Observatoire de Genève, Switzerland, 2023).
2. Invited seminar: "A massive empirical approach to investigate the hidden secrets of Galactic high-mass OB stars" (Potsdam University, Germany, online, 2021).
3. Invited seminar: "A massive empirical approach to investigate the mysteries of Galactic high-mass OB stars" (KU Leuven, Belgium, online, 01/2021).
4. Invited seminar: "IACOB: a massive survey to unveil the mysteries of Galactic high-mass OB stars" (Innsbruck University, online, 01/2021).
5. Invited seminar: "Singing SONGs with the hunter and friends: a tale of massive stars" (Aarhus University, Denmark, 08/2017).
6. Invited seminar: "The IACOB project, a new era in the study of Galactic OB stars" (Universidad de La Plata, Argentina, 06/2017).
7. Invited seminar: "The IACOB project, a new era in the study of Galactic OB stars" (Universidad de La Serena, Chile, 11/2015)
8. Invited seminar: "The IACOB project, a new era in the study of Galactic OB stars" (University of Bonn, Germany, 03/2015)
9. Invited seminar: "The IACOB project, a new era in the study of Galactic OB stars" (Nordic Optical Telescope, La Palma, 01/2015)
10. Invited seminar: "The IACOB project: a new era in the study of Galactic OB stars" (Observatoire de Genève, Switzerland, 12/2014).
11. Invited seminar: "The chemical composition of the Orion star forming region: stars, gas and dust" (University of Liege, Belgium, 10/2009).
12. Invited seminar: "The chemical composition of the Orion star forming region: stars, gas and dust" (Observatory of Bamberg, Germany, 10/2009).
13. Invited seminar: "The chemical composition of the Orion star forming region: stars, gas and dust (Universidad Nacional Autónoma de México, México, 12/2008).
14. Invited seminar: "Massive stars and their surrounding nebulae: a combined approach" (Observatoire de Genève, Switzerland, 11/2007).
15. Invited seminar: "Probing the ionizing radiation from massive stars using HII region spectra" (Universidad de Alicante, Spain, 07/2007).
16. Invited seminar: "Massive stars and their surrounding nebulae: a combined approach" (Observatoire de Paris – Site de Meudon, France, 02/2007).
17. Invited seminar: "Using HII regions to prove the ionizing radiation from massive stars" (Universidad Nacional Autónoma de México, México, 10/2006).

18. Invited talk: "Mind the gaps: a massive empirical approach to high-mass evolution (with the aid of IACOB, WEAVE, Gaia and TESS" (MIAPP, Germany, 08/2023).
19. Invited talk: "Getting ready for a reliable abundance analysis of several thousand Galactic OB-type stars". Investigating the roots, a workshop on atomic data (Heidelberg, Germany, 09/2022).
20. Invited talk: "The IACOB project: some on-going work and future prospects". Massive star community gathering (Heidelberg, Germany, 06/2022).
21. Invited talk: Singing SONGs with the Hunter and friends: a tale of massive stars". BEST meeting: BRITE related science (online, 07/2020).
22. Invited talk: "IACOB meets MAMSIE". ERC/MAMSIE workshop (Leuven, Belgium, 03/2018).

23. Invited talk: “The IACOB project meets the ISSI Team 367”. First workshop of the ISSI Team 367: Towards a new generation of Massive star models. Improving stellar evolution modelling with hydrodynamics, simulations and observations (Bern, Switzerland, 01/2017)
24. Invited talk: “Multi-epoch views of massive stars”. IAUS329: The lives and death-throes of massive stars (Auckland, New Zealand, 11/2016).
25. Invited talk: “Comparing stellar and ISM metallicities in the local universe”. Understanding Nebular Emission in High-Redshift Galaxies (Pasadena, USA, 07/2015).
26. Invited talk: “The CARMENES view of Massive Stars”. Amazing science with CARMENES (Granada, Spain, 05/2015).
27. Invited talk: “Atmospheres and stellar parameters: Discussion session: from observations to astrophysical quantities and beyond”. Massive star workshop: formation, evolution, properties (Montpellier, France, 10/2014)
28. Invited talk: “VFTS: General overview of the properties of the O dwarf sample”. Seventh meeting of the VFTS collaboration (Granada, Spain, 02/2014)
29. Invited talk: “VFTS: Preliminary results from N-abundance analysis of the O dwarf sample”. Sixth meeting of the VFTS collaboration (Bonn, Germany, 03/2013).
30. Invited talk: “The chemical composition of OB stars in the Orion star forming region”. The Orion nebula: a laboratory for the study of star formation and gaseous nebulae (Warsaw, Poland, 07/2012).
31. Invited talk: “Exploring the Local Group massive star content with 2-4m telescopes at ORM and CAHA”. Science with the optical-infrared telescopes at CAHA and ORM in the coming decade (Madrid, Spain, 03/2012)
32. Invited talk: “Quantitative spectroscopic analyses. IAC progress report”. Fourth meeting of the VFTS collaboration (Armagh, Ireland, 05/2011).
33. Invited talk: “*The VLT-FLAMES Tarantula survey of massive stars*”. *Jornada ESO 2011 (Granada, Spain, 02/2011)*
34. Invited talk: “FLAMES-UVES dataset: overview and status report”. First meeting of the VFTS collaboration (Amsterdam, The Netherlands, 10/2009).
35. Invited talk: “Oxygen abundances in OB-type stars”. Quick off meeting of the authors of the book “Oxygen in the Universe” (Paris, France, 05/2007).

12. Participation in International Conferences and Workshops

1. Stellar evolution along the HR diagram with Gaia (Naples, Italy, 09/2022). **Contributed talk** + SOC member
2. Investigating the roots, a workshop on atomic data (Heidelberg, Germany, 09/2022). **Invited talk**
3. Massive star community gathering (Heidelberg, Germany, 06/2022). **Invited talk**
4. NOT, a telescope for the future (La Palma, Spain, 06/2022). **Contributed talk**.
5. XV reunión científica de la Sociedad Española de Astrofísica (Tenerife, Spain, 09/2022). Poster
6. IAUS361: Massive stars Near and far (Ballyconnell, Ireland, 07/2022). Poster.
7. First virtual VFTS meeting (online, 10/2020). **Contributed talk**.
8. XIV.0 Reunión científica de la SEA (online, 07/2020). 2 posters + chair of a discussion session.
9. TASC6/KASC13 workshop: asteroseismology in the era of surveys from space and ground: stars, planets and the Milky Way (Leuven, Belgium, 07/2022). Member of discussion session and participation in a mentoring program for young students.
10. MOBSTER-1 virtual conference: stellar variability as a probe of magnetic fields in massive stars (online, 07/2020). Poster.
11. BEST meeting: BRITE related science (online, 07/2020). **Invited talk**.
12. Expanding the Gaia legacy: the role of Spanish ground based facilities (Barcelona, Spain, 02/2019). **Contributed talk**.
13. Sixth workshop on robotic autonomous observatories (Malaga, Spain, 10/2019). **Contributed talk**.
14. Annual meeting of the VFTS collaboration (Edinburg, UK, 05/2019). **Contributed talk**.
15. Lorentz center workshop on Weighing stars from birth to death. How to determine stellar masses? (Leiden, The Netherlands, 11/2018). **Contributed talk**.
16. First workshop on science with SONG: 4 more years (Tenerife, Spain, 10/2018). **Contributed talk**.
17. ERC/MAMSIE workshop (Leuven, Belgium, 03/2018). **Invited talk**.

18. First workshop of the ISSI Team 367: Towards a new generation of Massive star models. Improving stellar evolution modelling with hydrodynamics, simulations and observations (Bern, Switzerland, 01/2017). **Invited talk**.
19. IAUS329: The lives and death-throes of massive stars (Auckland, New Zealand, 11/2016). **Invited talk**.
20. Understanding the roles of rotation, pulsation and chemical peculiarities in the upper main sequence (Lake District, UK, 09/2016). **Contributed talk**.
21. First WEAVE-SCIP meeting (Barcelona, Spain, 03/2016). **Contributed talk**
22. Understanding Nebular Emission in High-Redshift Galaxies (Pasadena, USA, 07/2015). **Invited talk**.
23. First science with Gaia – the GREAT Network Science Symposium@EWASS2015 (Tenerife, Spain, 06/2015). **Contributed talk**.
24. Massive stars and the Gaia-ESO survey (Brussels, Belgium, 05/2015). **Contributed talk**.
25. Amazing science with CARMENES (Granada, Spain, 05/2015). **Invited talk**.
26. Eighth meeting of the VFTS collaboration (Sheffield, UK, 03/2015). **Contributed talk**.
27. Multi-object spectroscopy in the next decade: Big questions, large surveys and big fields (La Palma, Spain, 03/2015). Poster.
28. Massive star workshop: formation, evolution, properties (Montpellier, France, 10/2014). Invited talk.
29. XI Reunión Científica de la SEA (Teruel, Spain, 10/2014). **Contributed talk**.
30. IAUS307: New windows on massive stars (Geneva, Switzerland, 06/2014). **Contributed talk**.
31. First SVO workshop on data publishing in the VO (Madrid, Spain, 04/2014). **Contributed talk**.
32. Seventh meeting of the VFTS collaboration (Granada, Spain, 02/2014). **Invited talk**
33. What asteroseismology has to offer to astrophysics (Brussels, Belgium, 12/2013). **Contributed talk**.
34. Massive Stars: From alpha to omega (Rhodes, Greece, 06/2013). Poster.
35. 10th Potsdam Thinkshop: high resolution optical spectroscopy. From instruments to astrophysical models (Potsdam, Germany, 05/2013). **Contributed talk**.
36. Sixth meeting of the VFTS collaboration (Bonn, Germany, 03/2013). Invited talk + **Contributed talk**.
37. 30 Dor, the starburst next door (Baltimore, USA, 09/2012). **Contributed talk**.
38. The Orion nebula: a laboratory for the study of star formation and gaseous nebulae (Warsaw, Poland, 07/2012). **Invited talk**.
39. Mapping oxygen in the Universe (Tenerife, Spain, 05/2012). Chair SOC/LOC + **Contributed talk**.
40. Science with the optical-infrared telescopes at CAHA and ORM in the coming decade (Madrid, Spain, 03/2012). **Invited talk**.
41. Spanish contribution to ESA's Gaia mission (Madrid, Spain, 03/2012). **Contributed talk**.
42. Fifth meeting of the VFTS collaboration (Tenerife, Spain, 03/2012). SOC + chair LOC + **Contributed talk**.
43. Four decades of research on Massive stars: a conference in honour of A. Moffat (Montreal, Canada, 07/2011). **Contributed talk**.
44. GREAT-ESF: Stellar Atmospheres in the Gaia era workshop (Brussels, Belgium, 06/2011). **Contributed talk**.
45. Stellar clusters and Associations: A RIA workshop on Gaia (Granada, Spain, 05/2011). **Contributed talk**.
46. Forth meeting of the VFTS collaboration (Armagh, Ireland, 05/2011). Invited talk + **Contributed talk**.
47. Jornada ESO 2011 (Granada, Spain, 02/2011). **Invited talk**
48. Third meeting of the VFTS collaboration (Madrid, Spain, 10/2010). 4 short **Contributed talks**.
49. IAU272: Active OB stars: structure, evolution, mass loss, and critical limits (Paris, France, 07/2010). Poster.
50. The multiwaveleght view of massive stars (Liège, Belgium, 07/2010). **Contributed talk** + 2 posters
51. Seismological challenges for stellar structure. IV HELAS international conference (Lanzarote, Spain, 02/2010). **Contributed talk**.
52. Second meeting of the VFTS collaboration (Amsterdam, The Netherlands, 10/2009). **Invited talk**.
53. First meeting of the VFTS collaboration (Edinburg, UK, 01/2009). **Contributed talk**.
54. The Cosmic odyssey of the elements (Aegina, Greece, 06/2008). **Contributed talk**.
55. IAUS250: Massive Stars as Cosmic Engines (Kauai, USA, 12/2007). Poster.
56. Meeting of the authors of the book "Oxygen in the Universe" (Paris, France, 05/2007). Invited talk.
57. Massive stars: fundamental parameters and circumstellar interactions (Cariló, Argentina, 12/2006). **Contributed talk**.
58. Annual VLT-FLAMES survey of massive stars meeting (Madrid, Spain, 10/2006). **Contributed talk**.
59. The Metal Rich Universe (La Palma, Spain, 06/2006). **Contributed talk**.

60. Annual VLT-FLAMES survey of massive stars meeting (Munich, Germany, 03/2005). **Contributed talk**.
61. JENAM2004: The Many Scales in the Universe (Granada, Spain, 09/2004). **Contributed talk** + poster.
62. Annual VLT-FLAMES survey of massive stars meeting (Belfast, Ireland, 03/2004). **Contributed talk**.
63. The Eighth México-Texas Conference on Astrophysics: Energetics of cosmic plasmas (Mexico D.F, Mexico, 11/2002). Poster.
64. IAU Symposium No. 212: A massive star odyssey, from Main Sequence to supernova (Lanzarote, Spain, 06/2002). Poster.

13. Organization of International conferences and workshops

- 2023: SOC member of the international workshop *"Stellar variability, stellar multiplicity: periodicity in time & motion"* (Sofia, Bulgaria). This workshop was organized in the framework of the project "Revealing the Milky Way with Gaia" funded by the European Union COST (Cooperation in Science and Technology) action MW-Gaia.
- 2022: Organization of the biannual meeting (3.5 days) of the GEEMAS (*Grupo Español con interés en Estrellas Masivas*) collaboration (Tenerife, Spain).
- 2022: SOC member of the international workshop *"Stellar evolution along the HR diagram with Gaia"* (Naples, Italy). This workshop was organized in the framework of the project "Revealing the Milky Way with Gaia" funded by the European Union COST (Cooperation in Science and Technology) action MW-Gaia.
- 2018: Chair of the SOC/LOC of the *11th annual meeting of the VFTS collaboration* (Tenerife, Spain).
- 2017: Co-chair (together with L. Crivellari, IAC, Spain) of the organizing committee of the XXIX Canary Islands Winter School of Astrophysics *"Applications of Radiative Transfer to stellar and planetary atmospheres"* (Tenerife, Spain).
- 2015: Co-chair (together with F. Martins, LUMP, France) of the SOC of the Special Session *"Science with large spectroscopic surveys of Galactic OB stars: getting ready for Gaia"* of the EWASS (Tenerife, Spain).
- 2012: Chair of the SOC/LOC of the *5th annual meeting of the VFTS collaboration* (Tenerife, Spain).
- 2012: Co-chair (together with G. Stasinska, OPM, France) of the SOC of the international workshop *"Mapping oxygen in the Universe"* (Tenerife, Spain).
- 2008: SOC member of the international conference *"The Cosmic Odyssey of the Elements"* (Aegina, Greece).

14. Mentoring and Training Initiatives

- Mentor of postdoctoral researchers during the duration of their 1-3 year contracts at the IAC:
  - Gonzalo Holgado (2020-2021)
  - Ricardo Dorda (2019-2022)
  - Nikolay Britavskyi (2018-2021)
  - Melanie Godart (2015-2016)
- External advisor of PhD students elsewhere:
  - Sara Cuellar (Universidad de Valparaiso),
  - Jose Ever Gonzalez (Universidad de Honduras)
  - Siemen Burssens (KULeuven, Belgium),
  - Emilio Trigueros (Universidad de Alicante),
  - Javier Lorenzo (Universidad de Alicante),
  - Óscar Ramírez Agudelo (Amsterdam Univeristy, The Netherlands),
- Mentor of BSc/PhD students during their traineeship at the IAC:
  - Mercedes Contreras (2023, BSc student from Universidad de Murcia, Spain)
  - Sara Cuellar (2023, PhD student from Pontificia Universidad Católica de Valparaiso, Chile) *Traineeship founded by the Agencia Nacional Investigación y Desarrollo (ANIP).*
  - Kateřina Pivoňková (2023, PhD student from Masaryk University, Czech Republic) *Traineeship founded by the ERASMUS+ Per Aspera ad Astra project* (PI. D. Jones, Spain)
  - Jose Andrés Avellaneda (2020, BSc student from Universidad de La Laguna/Physics, Spain)
  - Siemen Burssens (2019, PhD student from KU Leuven, Belgium)

Traineeship founded by the AdG-ERG grant MAMSIE (PI. C. Aerts, Belgium)
  - Daniel Morera (2018, BSc student from Universidad de La Laguna/Mathematics, Spain)
  - Enrique García (2016, BSc student from Universidad de La Laguna/Mathematics)
- Supervisor of IAC summer grant students:
  - Carlos Martínez Sebastián (2021)
  - Abel de Burgos (2018)
- Training of students from the Department of Astrophysics of the ULL on the use of 1-3m telescopes at the ORM (2010-2022, La Palma, Spain).
- Participation in the course on "Complementary research activities" of the Master course on Astrophysics of the ULL with 2 seminars about "Galactic massive OB-type stars and the IACOB project".
- Host of postdoctoral research stays at the IAC (only longer than 2 weeks):
  - Catalina Arcos (2021, 4 months, Universidad de Valparaiso, Chile)
  - Andreas Irrgang (2018, 2 weeks, Bamberg observatory, Germany)
  - Michalis Kournotis (2019, 4 months, Astronomical Institute; Czech Republic)
- Author of the chapter *"A modern guide (for young students) to quantitative spectroscopy of massive OB stars"* included in the book *"Reviews in Frontiers of Modern Astrophysics: From Space Debris to Cosmology"* (eds. Kabath, Jones and Skarka; publisher Springer Nature) funded by the European Union Erasmus+ Strategic Partnership grant *"Per Aspera Ad Astra Simul"* 2017-1-CZ01-KA203-035562)

15. Teaching duties

15.1. Teaching assistance and courses at Universidad de La Laguna

- 2019 – 2022: Lecturer of the course *"Stellar Evolution"* (35h x 3 semesters) of the Master of Astrophysics at the Universidad de La Laguna (Spain).

15.2. Additional Teaching elsewhere

- 2017: Lecturer of the crash course (6h) on *Quantitative spectroscopy of massive O and B-type stars for postgraduate students* (Universidad de La Plata, Argentina).
- 2017: Lecturer of the tutorial (3+3h) on the *Application of radiative transfer codes to the hot star domain*, delivered as part of the XXIX Canary Islands Winter School of Astrophysics *"Applications of radiative transfer to stellar and planetary atmospheres"* (Tenerife, Spain)
- 2015: Lecturer of the crash course (6h) on *Quantitative spectroscopy of massive O and B-type stars for postgraduate students* (Universidad de La Serena, Chile).

16. Science Communication and Outreach Activities

2022 – 2022: Interview for the Spanish Ministry of Hacienda and Función Pública in the framework of the programme Talento Público.
2016 – 2016: Public talk for school students at Colegio Nuryana (La Laguna, Tenerife, Spain)
2015 – 2015: Interview in local TV in relation with the publication of a paper about sigma Ori AB.
2012 – 2012: Interview in several local media in relation with the celebration of the international workshop "*Mapping oxygen in the universe*"
2008 – 2008: Public talk at the town hall of Granadilla de Abona (Tenerife, Spain)
2000 – 2022: Several outreach visits to the Canary Islands' observatories (Tenerife & La Palma, Spain) including professional astronomers, general public and student of two IAC Winter schools.
2001 – 2001: Scientific advisor of the documentary "*Cielo, Mar y Tierra*", promoted by J. Burgos (Instituto de Astrofísica de Canarias).
1998 – 2000: Teacher of the course on "*Basic Astronomy*" organized by the primary school SEK-Santa Isabel (Madrid, Spain) as part of the educational program for children with high capacities.

17. Awarded observing time by international TACs

- More than 100 awarded **observing proposals** (half of them as PI) to several 1-10m telescopes.
- Over 200 nights of **on-site observational experience** with 10 instruments (spectroscopy and imaging) on 5 telescopes at the ORM observatory (La Palma, Spain).

18. Complete publication list

Since October 2000, Sergio Simón-Díaz authored

- A total of 265 entries in ADS (43 as first author)
- 132 refereed publications in international peer-review journals (20 as first author)
- 36 entries in VizieR related to refereed publications
- More than 85 publications of talks or posters in proceeding of international symposia
- 3 book chapters
- Cited 5668 times (6761 on google scholar rather than ADS)
- H-index=43 (h=48 on google scholar rather than ADS)
- H-index=18 for the 43 1st author publications
- I10-index: 109, i100-index: 12

17.1. Books

17.1.1. As editor

- *Radiative Transfer in Stellar and Planetary Atmospheres*, Edited by L. Crivellari, **S. Simón-Díaz** and A.J. Arévalo. ISBN: 9781108583572. Cambridge, UK: Cambridge University Press, 2019
- *Oxygen in the Universe*, Edited by G. Stasińska, N. Prantzos, G. Meynet, **S. Simón-Díaz**, et al. EAS Publications Series, Vol. 54, 2012, pp.3-63

17.1.2. As chapter author

- **S. Simón-Díaz** (2020), *A Modern Guide to Quantitative Spectroscopy of Massive OB Stars*, Reviews in Frontiers of Modern Astrophysics; From Space Debris to Cosmology, 155.
- G. Stasińska et al., (incl., **S. Simón-Díaz**) (2012), *Chapter 2: A Panorama of Oxygen in the Universe*, EAS Publications Series, 54, 65.
- G. Stasińska et al., (incl., **S. Simón-Díaz**) (2012), *Chapter 1: How to Derive Oxygen Abundances*, EAS Publications Series, 54, 3.

17.2. Submitted papers to peer-reviewed journals

1. **Simón-Díaz, S.**, et al. (2023, A&A, submitted), *The IACOB project X. Hunting for spectroscopic binaries in the O and B supergiant domain and the impact of intrinsic variability*.
2. Negueruela, I, **Simón-Díaz, S.**, et al. (2023, A&A, submitted), *The IACOB project. A new grid for the spectral classification of B-type stars*.

17.3. Peer-reviewed papers

1. de Burgos, A**., Simón-Díaz, S.**, et al. (2023*), The IACOB project. IX. Building a modern empirical database of Galactic O9-B9 supergiants: sample selection, description and completeness*, A&A, in press.
2. Nazé, Y., Britavskyi, N., Rauw G., Labadie-Bartz, J., **Simón-Díaz, S.** (2023), *Fast rotation: can't do it alone?*, MNRAS, in press
3. Burssens, S., Bowman, D.M., Michielsen, M., **Simón-Díaz, S.**, et al. (2023), *A calibration point for stellar evolution from massive star asteroseismology*, Nature Astronomy, in press).
4. Britavskiy, N., **Simón-Díaz, S.**, Holgado, G., Burssens, S., Maíz Apellániz, J., Eldridge, J. J., Nazé, Y., Pantaleoni González, M., & Herrero, A. (2023), *The IACOB project. VIII. Searching for empirical signatures of binarity in fast-rotating O-type stars*, MNRAS, 672, A22.
5. Jin, S., et al. (incl. **Simón-Díaz, S.** as part of the **WEAVE consortium**) (2023), *The wide-field, multiplexed, spectroscopic facility WEAVE: Survey design, overview, and simulated implementation*, MNRAS, in press.
6. Holgado, G., **Simón-Díaz, S.**, Herrero, A., & Barbá, R. H. (2022), *The IACOB project. VII. The rotational properties of Galactic massive O-type stars revisited*, MNRAS, 665, A150.

7. Blomme, R., et al. (incl. **Simón-Díaz, S.** as part of the **GES consortium**) (2022), *The Gaia-ESO Survey: The analysis of the hot-star spectra*, A&A, 661, A120.
8. Herrero, A., et al. (incl. **Simón-Díaz, S.**) (2022), *The nature of the Cygnus extreme B supergiant 2MASS J20395358+4222505*, A&A, 511, 3113.
9. Trigueros Páez, E., Barbá, R. H., Negueruela, I., Maíz Apellániz, J., **Simón-Díaz, S.**, & Holgado, G. (2021), *MONOS: Multiplicity Of Northern O-type Spectroscopic systems. II. Orbit review and analysis for 35 single-lined spectroscopic binary systems and candidates*, A&A, 655, A4.
10. Garcia, M., et al. (incl. **Simón-Díaz, S.**) (2021), *Massive stars in extremely metal-poor galaxies: a window into the past*, Experimental Astronomy, 51, 887.
11. Lennon, D. J., MAíz Apellániz, J., Irrgang, A., Bohlin, R., Deustua, S., Dufton, P.L., **Simón-Díaz, S.**, et al. (2021), *Hubble spectroscopy of LB-1: Comparison with B+black-hole and Be+stripped-star models*, A&A, 649, A167.
12. Martinet, S., Meynet, G., Ekström, S., **Simón-Díaz, S.**, et al. (2021), *Convective core sizes in rotating massive stars. I. Constraints from solar metallicity OB field stars*, A&A, 648, A126.
13. Castro, N., et al. (incl. **Simón-Díaz, S.**) (2021), *Mapping the core of the Tarantula Nebula with VLT-MUSE. II. The spectroscopic Hertzsprung-Russell diagram of OB stars in NGC 2070*, A&A, 648, A65.
14. Maíz Apellániz, J., Barbá, R. H., Fariña, C., Sota, A., Pantaleoni González, M., Holgado, G., Negueruela, I., & **Simón-Díaz, S.** (2021), *Lucky spectroscopy, an equivalent technique to lucky imaging. II. Spatially resolved intermediate-resolution blue-violet spectroscopy of 19 close massive binaries using the William Herschel Telescope*, A&A, 646, A11.
15. Bestenlehner, J. M., Crowther, P.A, Caballero-Nieves, S.M, Schneider, F.R.N., **Simón-Díaz, S.**, et al. (2020), *The R136 star cluster dissected with Hubble Space Telescope/STIS - II. Physical properties of the most massive stars in R136*, A&A, 499, 1918.
16. de Burgos, A., **Simón-Díaz, S.**, Lennon, D. J., Dorda, R., Negueruela, I., Urbaneja, M. A., Patrick, L. R., & Herrero, A. (2020), *High-resolution spectroscopic study of massive blue and red supergiants in Perseus OB1. I. Definition of the sample, membership, and kinematics*, A&A, 643, A116.
17. St-Louis, N., et al. (incl. **Simón-Díaz, S.**) (2020), *An extensive spectroscopic time series of three Wolf-Rayet stars - II. A search for wind asymmetries in the dust-forming WC7 binary WR137*, MNRAS, 497, 4448.
18. Berlanas, S. R., Herrero, A., Comerón, F., **Simón-Díaz, S.**, Lennon, D. J., Pasquali, A., Maíz Apellániz, J., Sota, A., & Pellerín, A. (2020), *Spectroscopic characterization of the known O-star population in Cygnus OB2. Evidence of multiple star-forming bursts*, A&A, 642, A168.
19. Bowman, D. M., Burssens, S., **Simón-Díaz, S.**, Edelmann, P. V. F., Rogers, T. M., Horst, L., Röpke, F. K., & Aerts, C. (2020), *Photometric detection of internal gravity waves in upper main-sequence stars. II. Combined TESS photometry and high-resolution spectroscopy*, A&A, 640, A36.
20. Maíz Apellániz, J., Trigueros Paez, E, Negueruela, I, Barbá, R.H, **Simón-Díaz, S.**, et al. (2020), *MONOS: Multiplicity Of Northern O-type Spectroscopic systems. I. Project description and spectral classifications and visual multiplicity of previously known objects (Corrigendum)*, A&A, 639, C1.
21. Burssens, S., **Simón-Díaz, S.**, Bowman, D. M., Holgado, G., Michielsen, M., de Burgos, A., Castro, N., Barbá, R. H., & Aerts, C. (2020), *Variability of OB stars from TESS southern Sectors 1-13 and high-resolution IACOB and OWN spectroscopy*, A&A, 639, A81.
22. **Simón-Díaz, S.** (2020), *A Modern Guide to Quantitative Spectroscopy of Massive OB Stars*, Reviews in Frontiers of Modern Astrophysics; From Space Debris to Cosmology, 155.
23. Holgado, G., **Simón-Díaz, S.**, et al. (2020), *The IACOB project. VI. On the elusive detection of massive O-type stars close to the ZAMS*, A&A, 638, A157.
24. Barbá, R. H., et al. (incl. **Simón-Díaz, S.**) (2020), *A new spectroscopic analysis of the massive O + O type binary HD 54662 AB*, A&A, 494, 3937.
25. Herrero, A., Parthasarathy, M., **Simón-Díaz, S.**, Hubrig, S., Sarkar, G., & Muneer, S. (2020), *Analysis of absorption lines in the high-resolution spectra of five hot post-AGB candidates*, A&A, 494, 2117.
26. **Simón-Díaz, S.**, et al. (2020), *A detailed non-LTE analysis of LB-1: Revised parameters and surface abundances*, A&A, 634, L7.
27. Maíz Apellániz, J., Pantaleoni González, M., Barbá, R. H., **Simón-Díaz, S.**, Negueruela, I., Lennon, D. J., Sota, A., & Trigueros Páez, E. (2019), Search for Galactic runaway stars using Gaia Data Release 1 and HIPPARCOS proper motions (Corrigendum), A&A, 629, C2.

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