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Challenges and projects to progress toward gender equality in the Spanish astronomical community.

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Abstract

In the last decades important improvements have been made towards better access and working conditions for women in science. However, we are still far from reaching gender equality in the scientific field. We still suffer from gender stereotypes during childhood, subtle gender bias in academic and scientific evaluations, unequal work-life responsibilities, gender pay gap and challenging glass ceilings, among many other factors, that prevent real equal opportunities in the development of women's careers.

The Women and Astronomy Committee of the Spanish Astronomical Society works to progress towards gender equality in the Spanish astronomical community by organizing and promoting activities that raise awareness on this issue and contribute to eliminating gender inequality factors in the scientific and research environment.

In this proceedings paper, we summarize the report presented by the Committee at the XV Spanish Astronomical Society meeting in September 2022 in La Laguna (Tenerife). First of all, we present the report of our activities during the 2020-2022 period. Then, we have identified a number of key areas where we need especially to work now. We present our upcoming projects classified in the following lines of work: early stages of the research career, increasing awareness and providing tools to the community, actions at the institutional level, work-family balance, addressing harassment, and diversity and LGBTI+ initiatives.

1 Introduction

The situation of gender inequality in the scientific field is currently well-diagnosed (e.g. [1]), both as the reflection of gender inequality factors in society and as the result of specific issues in the scientific context. The Spanish research environment, and particularly the Spanish astronomical community, follows this general trend, with some progress seen over the last years, although there is still much room for improvement [2].

In this context, the Women and Astronomy Committee¹ (CMyA, in its Spanish acronym) of the Spanish Astronomical Society (SEA) was founded in 2010 with the aim of collaborating in a better diagnosis of the existing inequalities in the Spanish astronomical community and their causes, as well as to organize activities that contribute to their elimination. Throughout its history, the CMyA has organized activities along different lines: scientific outreach focused on increasing the visibility of Spanish women astronomers, specific analysis of the causes for inequality throughout the different stages of the scientific career, creation of networks among Spanish women astronomers, increasing community awareness on this issue, etc.

The SEA held its XV biannual scientific meeting last September 2022 in Tenerife, Spain. In this conference the CMyA presented the report of its activities during the period 2020-2022, as well as the key projects that intends to carry out over 2022-2024, in order to promote the involvement of the community. This paper of the conference proceedings is a summary

¹<https://www.sea-astronomia.es/comision-mujer-y-astronomia>

of the CMyA oral contribution. Due to our usual work context, several of the references provided are in Spanish.

2 Summary of CMyA activities in 2020-2022

Over the past two years, a total of 19 people (17 women and 2 men) have been part of the core group of the CMyA, currently composed of 13 members. The committee's bylaws have been renewed, and are published in its webpage. The CMyA holds monthly meetings, and organizes its activity through different working groups. The CMyA can also count on the support of the so-called Extended Group, made up of SEA members who wish to receive information on gender and science and collaborate with particular activities, which currently has around 60 members. The minutes of the CMyA meetings are available for all members of the Extended Group, as well as for all SEA members under request.

The activities carried out in this two-years period are classified in five main areas:

1. **Outreach.** In the framework of February 11, International Day of Women and Girls in Science, the CMyA organizes [activities](#) aimed at giving visibility to women astronomers and to promote scientific interest among children and young girls. These past two years we have celebrated the fourth and fifth editions of the activity *Chat with a Woman Astronomer*, an annual online activity in which for twelve hours anyone can chat with professional woman astronomers to ask questions about astronomy or their professional careers. More than 50 woman astronomers participate each year, chatting with hundreds of people and dozens of schools. The CMyA also organizes creativity contests for children (short stories in 2021, videos in 2022), publishing the winning entries on the SEA website and its social networks. We also highlighted the work of women astronomers at the banner of the SEA main webpage and helped other institutions to advertise their own activities. All the information can be found in the CMyA webpage.
2. **Analysis.** In 2021 we conducted a survey among SEA members, with the goal of obtaining a detailed diagnosis of the situation of gender inequality in the Spanish astronomical community and its effect on scientific careers. The survey was answered by 225 people (25% of SEA members), of which 34% were women. The results, which show the existence of the so-called "scissors" diagram, were provided for SEA human resources studies. We also carried out a specific study on the possible gender-differentiated effect of COVID-19 lockdown on the number of astronomical publications. No biases were found against women in 2020 with respect to previous years, although the study should be extended to 2021 and 2022. Results were published in [2021 SEA Summer Newsletter](#).
3. **Awareness-raising.** In 2020 we organized a [colloquium](#) at the 2020 Spanish Astronomical Society online meeting where we presented an [open document](#) with information, statistics, resources and tools for SEA members to better understand the factors of gender inequality in our work environment and be able to contribute to mitigating or eliminating them in their daily work. The document will be updated on an ongoing basis. In March 2022, under the "synergies" SEA scheme, we organised the [online](#)

[meeting](#) entitled "Gender inequality in Science: diagnosis and debate for progress toward real equality". The event included a talk that reviewed the current situation of gender inequality in science with updated data, both in general in the world and in the specific case of Spanish astronomy. This was followed by a round table discussion with female experts in the field and a debate with the audience, aimed at complementing the analysis with the various opinions and experiences in the community. The event was attended by more than 90 people.

4. **Mentoring.** Under the motto "Walking together Towards the Sky", we launched the first edition of the [Mentoring program](#) (see Manjavacas et al. in this Proceeding series), with more than 50 women participating as either mentors (25) or mentees (27). The Mentoring program included two training sessions for mentors, and different small workshop sessions targeting common issues for young female astronomers (i.e. impostor syndrome). Peer mentoring sessions for both mentors and mentees were held every two to three months, with a specific goal of building networks and sharing experiences. As the second edition of the Mentoring program starts, most of the participants in the previous year decided to continue ($\sim 80\%$), and a survey among the participants showed a high fraction of satisfaction, with an average score of 9 out of 10.
5. **Communication and collaborations.** We have dedicated important efforts to make visible the role of women in astronomy and to raise awareness about the importance of advancing towards equality, both in professional environments (e.g. contributed talk at the European Astronomical Society -EAS- meeting in June 2022) and in the media (numerous interventions and publications in radio and newspapers). Our involvement also includes collaborating in different actions with other institutions, such as the EAS "Inclusion and diversity" working group (since January 2022), or the working groups on mentoring of both the IAU (since 2022) and the Spanish Ministry of Science and Innovation (since May 2022).

3 Challenges in the first stages of the academy

The effects of gender inequality in scientific careers are observed in two different types of segregations: a horizontal one and a vertical one. The horizontal segregation describes the fact that, even in countries where there is gender parity among university students, there is an imbalance among academic disciplines, with men outnumbering women in science and engineering disciplines. This is the result of gender stereotypes associated with science that are transmitted since childhood and throughout pre-university education, and whose effects are detectable from a very early age [3]. In Spain, studies also show the influence of these effects (e. g. [4]). A Vertical segregation implies that women who decide to embark on a professional scientific career are less likely to reach the highest and decision-making positions than their male counterparts, which is reflected in the well-known scissors diagram [1, 2].

The effect of both phenomena can be seen in Figure 1, which shows the evolution between 2002 and 2022 of the percentage of women in the field of Astronomy and Astrophysics in Spain, according to the latest report on human resources in Astronomy and Astrophysics of

the Spanish Astronomical Society [5]. There is no gender parity (at least 40-60%) even in the undergraduate stage, and the numbers worsen in the subsequent stages. The evolution over the last 20 years is particularly worrying, since not only there is no significant growth of the women percentage, but in recent years there is also an important decrease at the undergraduate and graduate stages, which will constitute the scientific community in the coming decades.

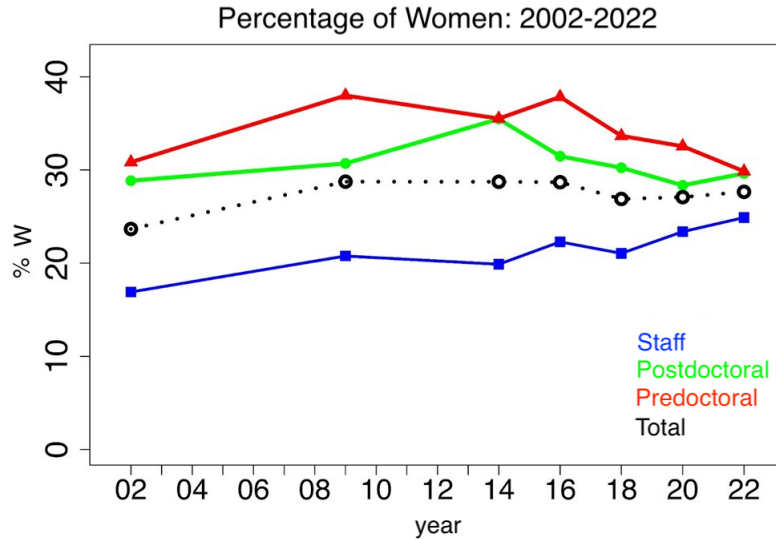


Figure 1: Evolution between 2002 and 2022 of the percentage of women in the field of astronomy and astrophysics in Spain. Different colours correspond to different stages of the scientific career, and the total number is indicated in black.

Women scientists in the early stages of their careers suffer the consequences of both horizontal and vertical segregation. On the one hand, they carry the effects of a stereotypical upbringing that has left them less self-confident and in the minority among their peers. On the other hand, they try to compete in a work environment in which they are judged more harshly [6], have fewer reference figures to follow and will encounter more obstacles to progress (e.g. [7]). To overcome this situation, it is essential to create support and communication networks, and to promote greater self-confidence in young women astronomers.

In this context, in 2021/2022 we launched the first edition of the SEA Mentoring program for young women astronomers (see Sec. 1 and Manjavacas et al. in this Proceedings series), which is currently starting its second edition. This program generates mentor-mentee pairs, composed of a junior and a senior female astronomers, to promote the transmission of knowledge and experience, as well as professional orientation. Furthermore, the program also includes a specific training program for mentors, peer-mentoring sessions for mentors and mentees so that they can share their experiences, and specific thematic sessions, such as one about the impostor syndrome. All of this also generates a solid network of collaboration and support among Spanish women astronomers.

4 Increasing awareness and providing tools to the community

Gender inequality in science today is not only a consequence of past inertia, but the result of current factors of inequality that require active and direct action for their disappearance. All of us (women, men, non-binary) can play a relevant role in this process, detecting the manifestations of gender inequality in our daily work and carrying out small daily actions that contribute to the creation of more egalitarian work environments.

In this line of action, in recent years the CMyA has organised training activities focused on providing information, data and tools to promote awareness and actions by SEA members with respect to gender equality. Two examples are the colloquium on the open document with tools, organised and published in 2020, and the synergy with a round table of experts, organised in 2022 (see Sec. 2).

These previous activities have provided the community with an overview of the current situation of inequality and its general causes. We now consider that it is convenient to go a step further and to address separately the different aspects that make up this multifaceted situation, providing more detailed and complete information and the opportunity to specifically discuss each of them. We are therefore organizing a training course on gender, inclusion and science for 2023, with 10 online seminars on different topics taught by experts in the corresponding subjects. The subjects to be covered are the following:

1. Introduction: advances and challenges to reach gender equality in science.
2. University education with gender perspective.
3. Subtle gender bias in the scientific career.
4. Gender diversity and inclusion.
5. Inclusive language.
6. Harassment.
7. Inclusion of gender perspective in scientific projects.
8. How to be an ally.
9. Equality plans in scientific institutions.
10. Glass ceiling.

5 Actions at the institutional level

The involvement of institutions is essential to advance towards equality, since they have the capacity to apply measures to modify unequal work dynamics in a general, effective and lasting manner. In particular, the implementation of affirmative action policies is necessary, i.e. measures and strategies aimed at eliminating situations, prejudices, behaviour and cultural

and social practices that prevent an undervalued or discriminated social group from achieving a real situation of equal opportunities. This is established in the Spanish Constitution itself, which states that (Article 9.2) "It is the responsibility of the public authorities to promote the conditions so that the freedom and equality of the individual and of the groups in which she/he is integrated are real and effective; to remove the obstacles that prevent or hinder their fullness and to facilitate the participation of all citizens in political, economic, cultural and social life".

Furthermore, the [Spanish legislation](#) [8] establishes that it is mandatory for all companies with more than 50 employees to have a Gender Equality Plan, defined as "An ordered set of measures, adopted after carrying out a diagnosis of the situation, aimed at achieving equal treatment and opportunities between women and men in the company and eliminating discrimination based on sex". To ensure its effectiveness, a Gender Equality Plan must include: (i) A detailed diagnosis of the gender equality situation in the corresponding institution, with statistics dis-aggregated by sex. (ii) Adequate affirmative action policies for the improvement of gender equality within the institution, appropriate to the circumstances and timeframe considered by the gender equality plan. Their implementation and application should be accessible to all staff members. (iii) Financial resources and qualified personnel for the implementation of the measures considered. (iv) Periodic evaluation of the measures, based on indicators to check their degree of adequacy and compliance.

Aiming to create an inclusive work environment and to help mitigate the inequalities previously mentioned, there are some examples of affirmative actions at institutional level that can be implemented in the different areas:

1. Dynamics in the workplace. It is essential to create an inclusive and gender-equal institutional environment. Possible measures:

- Improvement of the visibility of women's work (seminars given by women, networking between women, promote outreach activities with gender parity).
- Use of inclusive language in all communications.
- Explicit and active condemnation of sexist attitudes.
- Ensuring work-life balance (see Sec. 6).

2. Promotion, evaluation, and selection processes. The existence of unintentional subtle gender bias hinders objectivity in evaluation processes. Some possible measures to ensure objectivity and avoid discriminatory attitudes:

- Specific training on gender equality and subtle bias for those who participate as reviewers in selection processes.
- Consideration of the influence of work-life balance factors (e.g. maternity leave) for men and women in the criteria applied in selection, hiring and promotion processes.
- Gender parity composition (at least 40-60%) in selection, scientific and time allocation committees, PhD tribunals, project evaluation panels, etc.
- Whenever possible, blind evaluations.

- Transparency, clarity and publicity in the evaluation and selection criteria.

3. Conferences and workshops. These events are a fundamental scenario for publicizing scientific work and creating collaborative networks. It is therefore important to guarantee gender equality in their organization and course. Possible measures:

- Gender parity composition (at least 40-60%) in scientific and local organizing committees (SOC and LOC).
- Gender parity among invited speakers.
- Work-family measures: Childcare service provided during the conference, financial assistance for researchers travelling with minors, etc.
- Provide the option to attend remotely, to facilitate the attendance of those who cannot travel (also convenient in ecological terms).

4. Workload distribution. It is important to ensure that measures adopted for parity do not result in an excessive workload for women scientists. The extra participation of women in parity committees should be compensated by a discharge of responsibilities in other areas.

The SEA is not an ordinary scientific institution, but a collaborative society of astronomers in Spain. Therefore, its capacity to implement institutional measures is lower, and it has little direct influence on the working conditions of its members. However, it also has the capacity to act, both through the direct application of measures in its normal operation and through the example it can set for other ordinary institutions. For this reason, the CMYA, with the support of the SEA management board, considers the following lines of action:

- Update of the SEA's Gender Equality Plan. Compliance and evaluation of measures.
- Ensuring the use of inclusive language in the SEA official email communications, official documents, forms, web, etc.
- Systematisation of the human resources statistics dis-aggregated by gender.
- Gender parity among the speakers participating in SEA's conferences and events.

6 Work-life/work-family balance

When talking about work-family balance, it is relevant to take into account that this is a transversal issue, related to the overall work-life balance. Considering the case of Spain, the data show that nowadays the distribution of household work and the care of children and dependents continues to be very unbalanced, with women dedicating many more hours than men [9]. Therefore, the labor consequences derived from work-family balance are also suffered mainly by women, generating an important factor of inequality. Thus, although the final goal must be to achieve a general work-life balance, we focus mainly in the work-family aspect,

as it is still a gender inequality cause. It is clear that an improvement of the work-family balance is necessarily linked to the concept of *co-responsibility*.

To improve the work-family balance in the work environment we consider measures taken at three different levels:

- **Governmental level: laws and regulations.** States have the capacity to establish legislative and regulatory frameworks to produce better work-family balance possibilities, as well as a more balanced distribution of the associated responsibilities. State action is essential, since its measures are more lasting and produce greater social transformation. In addition, they reach the entire population, without depending on the specific work environment in which people work. In Spain, important steps have been taken in recent years, such as an increase in the number of weeks of maternity and paternity leaves (16 weeks in each case). There are also specific regulations for public employees (a [specific gender equality plan](#) [10] and additional measures such as [flexible working hours](#) [11], the possibility of reduced working hours, etc.). However, there is still much room for improvement to achieve a good work-life balance and an equilibrium in the distribution of responsibilities.
- **Institutional level: gender equality plans and group policies.** Institutional equality plans can and should include measures to facilitate work-family reconciliation. Some examples would be creche grants, after-school activity grants, technological facilities, measures aimed at facilitating flexible working hours, etc. Furthermore, the issue of work-family balance can be taken into account in smaller groups and daily contexts, such as the organization of a research group. This can be done independently of the corresponding institution work-life policies, and it has a great effect, even if it is in a short-range environment. Some of the possible measures are: ensuring digital disconnection outside working hours, schedule working meetings exclusively during working hours (with no time extensions), flexible working plans to take into account possible personal circumstances of any group member (not only family-care), ensuring that no member of the group misses out on participation or leadership opportunities due to family circumstances (e.g. maternity leave), etc.
- **Personal level: co-responsibility and self-care** Last but not least, work-life, and specially work-family balance implies a personal responsibility inside one's own family. It is necessary to deconstruct some of the ideas learned in the childhood about family roles. The article [What Causes the Child Penalty? Evidence from Adopting and Same-Sex Couples](#) [12], compares the "child penalty" between heterosexual couples and same-sex couples, showing that the penalty is lower in same-sex couples. It therefore considers that the variation is due to the different family roles associated with gender. The definition of the different roles inside a couple is obviously an internal decision, but the traditional social tendency to assign women greater responsibility for caregiving must be taken into account by both partners in order to build real co-responsibility. In this regard, some websites and citizen platforms, such as the so-called [Club de Malas Madres](#) (Bad Mothers Club), provide videos related with work-life balance, self-care and motherhood, among other resources.

The CMyA has a work-family balance working group, focused on discussing measures to improve work-family balance that can be implemented at the SEA level. We also distribute information on measures that can be taken in the work environments of SEA members.

7 Addressing harassment

Harassment is one of the least openly discussed issues when considering labor rights and equality, and nevertheless it has devastating consequences. According to a survey by the Spanish Ministry of Science and Innovation conducted in 2021, 8.6% of female researchers admitted having suffered sexual harassment[13]. And yet this number probably does not reflect the full reality of the problem, both because of the difficulty many victims have in becoming aware of their situation and, if they do, the reluctance to acknowledge it publicly. Aware and concerned about this, the CMyA has decided to take actions to give visibility to this problem, with the aim of mitigating its consequences and creating a space in which to provide support and advice to victims.

According to the Spanish penal code, harassment can be defined as a situation in which, without necessarily involving explicit or non-explicit threats or the direct use of violence, a person *harasses* another in a repeated and insistent way, altering the victim's life and attempting against his/her integrity, regardless of the intention. The Spanish penal code also defines different types of harassment (e.g. [8], art. 7), as well as their sanctions (e.g. [14], art 184): workplace harassment, harassment based on gender, on sexual orientation, psychological harassment and sexual harassment, among others.

Harassment situations are more likely to occur in hierarchical environments[15], especially those in which some people are heavily dependent on others in higher positions, as is the case in academia. In addition, the risk of harassment increases in environments where there are more men than women, as is the case of many scientific fields. The book "*Acoso: MeToo en la ciencia Española*" [15], published in 2021, reflects through testimonies how the hierarchical system present in Science encourages harassment situations to occur.

There are several concerns regarding harassment that should be taken into account. A particularly striking one is the self-identification of the victim. In many cases, victims are not able to identify their situation as harassment, due to its subtle and non-explicit characteristics and the scarce knowledge that still exists on this subject. In this regard, the existence of harassment protocols is an essential tool to help identify and deal with these situations. Fortunately, many Spanish institutions now have anti-harassment protocols, but it is still necessary to increase the knowledge of their staff about them.

Another key issue is the concern of victims that their testimony will not be considered or believed, and the repercussions that a report may have on their professional career due to the hierarchical structure of academia. It is also important the discouraging nature of the complicated bureaucracy associated with reporting, and the feeling of lack of support during the process.

To help address and mitigate this problem, the CMyA has decided to implement in the coming years a series of actions:

- Compiling the anti-harassment protocols of Spanish scientific institutions and publish them on the CMyA website, to promote awareness and provide easy access to them.
- Revising SEA's gender equality plan to include anti-harassment measures.
- Providing SEA members with a confidential point of contact at which to provide information and accompaniment on harassment issues.
- Creating "violet contacts" at SEA scientific meetings to contact and report possible situations of harassment that may occur.
- Including a session on harassment in the training course organized for 2023 (Sec. 4).

8 Diversity and inclusion: LBTI+ initiatives

In order to further strengthen the diversity, equity and inclusion of Women in Astronomy, we have created a new LBTI+ working group within the CMyA, following the initiatives proposed in the equality plans of both the General State Agency ([10] Eje 6, Medida 6) and the Superior Council for Scientific Research [3rd equality plan](#) (Eje 6, Medida 4). The new LBTI+ group will pay special attention to the well-being of the LBTI+ female astronomers, as they can suffer situations of special vulnerability (a.k.a. multiple types of discrimination or intersectionality). In this regard, we want to boost the LBTI+ visibility and to make the SEA members aware of their vulnerable situation.

The equality plans presented by AGE and CSIC propose a study of the situation of the LGTBI+ collective. We aim to include a section on the gender perspective in future sociological and human resources studies to analyze the situation of the LGTBI+ collective in the SEA. This action has also been launched by the European Astronomy Society (EAS).

We also promote a series of very simple actions, such as:

- Apart from working on the visibility of the collective every day of the year, we plan to introduce a small logo on the SEA website during the month of June, the month of Pride. This initiative has also been carried out by other European institutions, such as the University of Amsterdam or the University of Heidelberg, and also in the USA.
- For the sake of the diversity of our society, we will include a session focused on the richness of gender and identity within the training course we are organizing for 2023 (see Section 4), with the main goal of training and updating SEA members regarding the evolution of society and the new generations of SEA in relation to gender identity.
- Organization of talks where the efforts of the LBTI+ community in Astronomy are made visible, highlighting the intersectionality of the problems they suffer.
- Creating an area in the SEA website to store informative, formative and practical material that relates science and LBTI+, such as links to websites like [PRISMA](#) (Association for Affective-Sexual and Gender Diversity in Science, Technology and Innovation).

It is worth mentioning that the SEA does not currently have a commission focused on LGTBI+ issues. Here we are approaching this topic in an intersectional way, focusing on women and science. We are aware that this may not be enough, but if we are able to make this gains strength, we will propose the creation of a new LGTBI+ commission.

9 Conclusions

The CMyA will continue in the next years working along the lines described above, pushing for a real gender equality within our community. The contribution of the whole community at all levels, from individuals to group leaders and institute directors, will be essential for a real step forward in this direction.

References

- [1] She Figures 2021. Gender in research and innovation: statistics and indicators. EU publications.
- [2] Científicas en Cifras 2021. Unidad de Mujer y Ciencia. Ministerio de Ciencia e Innovación. España.
- [3] Bian, Leslie et al., 2017, *Science*, Vol. 355, Issue 6323
- [4] Ayuso, Fillola et al., 2021, *IEEE Transactions on Education*, Vol. 64, Issue 1
- [5] Quinto Informe de Recursos Humanos en Astronomía y Astrofísica en España. SEA 2022.
- [6] Moss-Racusin, Corinne A. et al., 2012, *PNAS*, Vol. 109, Issue 41.
- [7] Caplar, Neven et al., 2017, *Nature Astronomy*, Volume 1, id. 0141
- [8] Ley Orgánica 3/2007, para la igualdad efectiva de mujeres y hombres, BOE-A-2007-6115
- [9] Mujeres y hombres en España. Instituto Nacional de Estadística. 2021.
- [10] III Plan para la Igualdad de Género en la Administración General del Estado. BOE-A-2021-2.
- [11] Instrucciones sobre jornada laboral de la AGE, BOE-A-2019-2861.
- [12] Martin Eckhoff Andresen and Emily Nix, *Journal of Labor Economics* 2022 40:4, 971-1004
- [13] [Estudio sobre la situación de las jóvenes investigadoras en España. Ministerio de Ciencia e Innovación, 2021.](#)
- [14] Ley Orgánica 11/1999, de 30 de abril. BOE-A-1999-9744
- [15] Bernardo Alvarez, A., 2021, *Acoso. Me Too en la Ciencia Española*, Next Door Publishers. 2021.