



Planck Publication Management

Facilitating the collaborative writing of scientific articles based on proprietary data

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The collaborative writing of research articles, based on the exploitation of proprietary data, can be a very difficult process in large and international collaborations. The Planck Collaboration is a geographical spread of a large number of scientists, working in more than 200 institutes distributed in 28 countries around the world, writing dozens of papers all at once. In this poster contribution, we review some practical aspects of managing all Planck publications.

INTRODUCTION

It is becoming common that Science Operations and user's support activities in Astronomy entails some publication service being offered to scientific communities. This trend is seen in ground-based facilities and space-based missions [e.g. ALMA, Planck].

The size of experimental teams in the CMB community has been increasing over the past decades. Previous space-based CMB missions, COBE and WMAP, reported their first results in papers listing 28, and 21 co-authors, respectively [1, 2]. Many CMB ground based experiments submit papers with a few dozen of co-authors [e.g. 3, 4, 5]. The first Planck results were reported in a paper co-signed by 400 co-authors [6]. To date, more than 700 people have signed at least one Planck paper. Such a large number of participants contributing to the same publications is definitely new territory for the CMB community. And because Planck is the largest experimental collaboration in the CMB community, it faces collective authorship challenges that are more common to the particle physics community than to the astronomical community. Future CMB experiments such as CORE+, Litebird or CMB-S4 may follow the same trend.

THE WRITING TEAM

The Planck Collaboration consists of all the scientists which have contributed to the development of the Planck mission, and who participate in the scientific exploitation of the data during the proprietary period. A complete database of all members of the collaboration and external collaborators is maintained by the Principal Investigators, and ESA.

Currently, the writing team is a geographical spread of 718 scientists working in 28 countries. Figure 1 displays the distribution of main affiliation among co-authors of Planck papers.

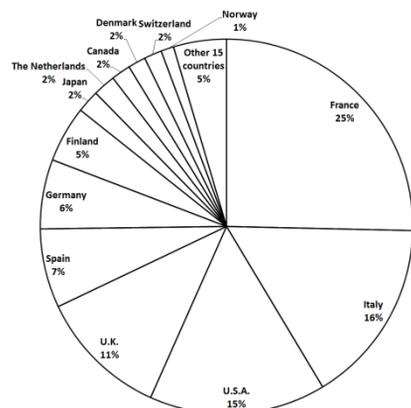


Fig. 1. Geographic distribution of main affiliation among co-authors of Planck papers.

In spite of the fact that larger teams are harder to manage and coordinate, they do offer one advantage, which is the capability to find within the collaboration qualified expertise to perform a rigorous internal review process of all papers before submission. And that is done for all Planck papers. The Planck Editorial Board ensures that all Planck papers are internally reviewed in a thorough, consistent, and coherent manner.

COMMON WRITING REPOSITORY

A software versioning and revision control system repository, with Lightweight Directory Access Protocol authentication, was set up by ESA in 2011, and it is maintained by the Planck Science Office.

The main purpose of the repository is to provide members of the collaboration with an easy way of contributing to the writing of articles and keeping up to date publication related files, thus facilitating the coordination of the publication effort and speeding up the writing and reviewing process.

Nowadays, all Planck papers are written through the Planck Publication Management repository, which allows centralized data storage, multiple backups, online access and sharing of publication material among members of the collaboration.

Thus, Planck actually relies on a private cloud computing network to propose, write, review, and submit papers during the exploitation of proprietary data.

RECENT PRODUCTION AND IMPACT

The Planck 2013 results are presented in a set of 31 papers. The intermediate results are presented in a set of 33 papers and 1 corrigendum. The early results are presented in a set of 27 papers. To date, the Planck collaboration has submitted a total of 91 post-launch papers to A&A and 1 corrigendum.

The post-launch papers have received 8,539 citations (as of November 2014) according to the digital library portal NASA Astrophysics Data System (ADS). The productivity and impact of post-launch Planck papers can be summarized by an h-index (Hirsch index) of 45. NOTE: The citation database in the ADS is NOT complete. Please keep this in mind if using the numbers reported in this communication.

A list of all Planck papers is available at:

<http://www.cosmos.esa.int/web/planck/publications>.

CONCLUSION

We have implemented a reliable and up-to-date common repository for Planck publications. The repository was adapted to the mission's needs, and it is flexible enough to be adapted to any evolution of the publication process. Other experiments and missions could benefit from a similar system.

So far, the Planck Publication Management system has allowed 718 colleagues to submit 91 papers during the proprietary data period. This volume of submission is equivalent to a rate of one paper submitted every 16 days over the past 4 years.

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