

Funded by the European Union's H2020 Programme

RADIOFOREGROUNDS THIRD

DISSEMINATION REPORT (2018)











Dissemination Report 3 (Month 36)

INTRODUCTION

RADIOFOREGROUNDS project dissemination has been an active process, where information has been tailored and targeted for an intended and identified audience. Apart from the traditional vehicles of journal publication and academic conference presentations it has involved a process of extracting the main messages or key implications derived from the research results and communicating them to those specific targeted audiences. So, in addition to scientific publications, it has included media stories, an international conference and presentations using on-line media and personal approaches.

The knowledge has been made accessible and usable to other parties, in research and industry, to reinforce the European RTD community and related industry in the international competition.

1.GENERAL FRAMEWORK OF THE DISSEMINATION AND COMMUNICATION ACTIVITIES

1.1 Objectives

RADIOFOREGROUNDS project communication objectives were:

- Raise public awareness and ensure maximum visibility of the project key facts, objectives, activities and findings among EU public at large;
- Announce and promote RADIOFOREGROUNDS events, contributing to upgrade its attendance and engagement potential;
- Support the dissemination objectives;

Communication has therefore contributed to the support of the dissemination and exploitation objectives while targeting stakeholders beyond dissemination and exploitation purposes such as the public at large comprising civil society at large.

Dissemination: "The public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications in any medium."

On the other side, the dissemination of the project outputs to key stakeholders has aimed at making the knowledge (results) developed through the project available to the widest audience and enhancing the project exploitation potential.



1.2 Stakeholders

RADIOFOREGROUNDS has reached the following groups of stakeholders for communication and dissemination activities:

REACHED AUDIENCES		ROLE	RELATED WP			
Mass media	National and International media	• To attract the interest of mass media for Cosmology as a hot topic in Astrophysics.	WP1			
Students	Primary and Secondary School	General knowledge on astrophysics.				
RADIOFORE GROUNDS Consortium	RADIOFOREGROUNDS partners	• Coordinate and ensure smooth implementation of the project activities in their respective countries.	WP1			
Astrophysics Community	 Cosmology groups and astrophysics community at large 	 Share knowledge and create long- term research collaboration. Enhance project's visibility via promotion throughout their contact network. 	WP2-6			
WIDER AUDIENCES (reached through communication, for awareness purposes)						
General Public	European civil citizens and the	WP1				

Table 1. RADIOFOREGROUNDS dissemination reached audiences, roles and related WPs

2. COMMUNICATION AND DISSEMINATION ACTIVITIES

The public and updated information of the dissemination activities within the scientific community can be found in the web page of the project: <u>http://www.radioforegrounds.eu/</u>. Here we include the status at the end of the project (year 3).

At month 36 the following communication and dissemination activities have been carried out. Following the Dissemination Plan we divide them in tools and channels:

2.1 Communication and Dissemination Tools

2.1.1 Info-graphics videos

Following the Dissemination Plan, we have recorded a short video for outreach purposes, to be displayed on wide screens at events and easily shared on the web.

The video describes clearly and succinctly the project objectives and challenges, and includes a representative number of people from all nodes involved in the project.

It has been used on the website, shared on social networks, and used during events. The following issues are addressed:



- Project scope and objectives
- Cosmology and the CMB (IAC QUIJOTE)
- Planck mission (ESA)
- RADIOFOREGROUNDS Consortium
- EU Commission H2020 Funding
- Data bases and web tools





See the VIDEO here: <u>https://www.youtube.com/watch?v=7UOsBQxbQII&t=7s</u>

2.1.2 Media Articles

Media articles make reference to all types of written press articles focusing on presenting the project, its activities, its outcomes, etc., that are published on different channels. They may take the form of news, presentations, announcements, tweets, posts, press releases, published on the project website, on external websites including partners' websites, on social networks, etc.

Presentations of results (http://www.radioforegrounds.eu/pages/presentations.php).



We include here the list of meetings where we have presented the RADIOFOREGROUNDS project during the third year of the project, separated by the speaker in each case:

C. Baccigalupi (SISSA):

 <u>S-PASS</u>. CMB foregrounds for B-mode studies (RADIOFOREGROUNDS conference). Tenerife, Spain. October 15-18, 2018.

R.B. Barreiro (IFCA - CSIC):

- i. <u>The QUIJOTE CMB experiment.</u> Designing Future CMB Experiments, California Institute of Technology - Pasadena, March 19 - 23, 2018.
- ii. <u>The Planck 2018 CMB maps.</u> COSPAR 2018, 42nd Assembly. Session E1.2: Knocking on Heaven's Door: CMB in Pursuit of the Footprint of Inflation. Pasadena (USA), July 14-22, 2018.
- iii. <u>The Planck 2018 CMB maps</u>. CMB foregrounds for B-mode studies (RADIOFOREGROUNDS conference). Tenerife, Spain. October 15-18, 2018.
- iv. <u>The QUIJOTE CMB Experiment (+ other low-frequency experiments).</u> Cosmological component separation course. University of Oslo. November 19-30, 2018.

J.A. Rubiño-Martín (IAC):

- i. <u>Foregrounds for B-mode studies</u>. LAPIS 2018: La Plata International School on Astronomy and Geophysics. La Plata, Argentina. April 23-27, 2018.
- ii. <u>The QUIJOTE experiment: status and first results</u>. Fifteenth Marcel Grossmann Meeting (MG15). University of Rome "La Sapienza", Rome. July 1-7, 2018.
- iii. <u>Cosmology with the CMB: latest results from Planck and QUIJOTE</u>. XIII Meeting of the Spanish Astronomical Society (SEA). Salamanca. July 16-20, 2018.
- iv. <u>The QUIJOTE experiment</u>. CMB foregrounds for B-mode studies (RADIOFOREGROUNDS conference). Tenerife, Spain. October 15-18, 2018.
- v. <u>Modelling RADIOFOREGROUNDS: combining Planck and QUIJOTE data. Future</u> work with Planck data. Madrid, Spain. December 3-4, 2018.



V. Pelgrims (LPSC Grenoble):

- i. <u>"Reconstruction of the regular Galactic magnetic field from polarized emission at CMB</u> <u>frequencies"</u>. BxB Workshop. Toulouse, France, June 14-15 2018.
- ii. <u>Reconstruction of the regular Galactic magnetic field from polarized emission at CMB</u> <u>frequencies</u>. 4th CRISM Conference. Grenoble, France, June 25-29 2018.
- iii. <u>Reconstruction of the regular Galactic magnetic field from polarized emission at CMB</u> frequencies. CMB foregrounds for B-mode studies (RADIOFOREGROUNDS conference). Tenerife, Spain. October 15-18, 2018.

F. Vansyngel (IAC):

- Scientific results from QUIJOTE Constraints on CMB radio-foregrounds. 53rd Rencontres de Moriond. La Thuile (Italy), March 2018.
- ii. <u>QUIJOTE results on synchrotron emission</u>. CMB foregrounds for B-mode studies (RADIOFOREGROUNDS conference). Tenerife, Spain. October 15-18, 2018.

F. Poidevin

- i. <u>New AME sources in the QUIJOTE MFI maps</u>. CMB foregrounds for B-mode studies (RADIOFOREGROUNDS conference). Tenerife, Spain. October 15-18, 2018.
- ii. <u>New AME sources in the QUIJOTE MFI maps.</u> Future work with Planck data. Madrid, Spain. December 3-4, 2018.

B. Casaponsa (IFCA - CSIC):

- iii. <u>Component separation with Neural Networks</u>. CMB foregrounds for B-mode studies (RADIOFOREGROUNDS conference). Tenerife, Spain. October 15-18, 2018.
- iv. <u>Component separation with neural networks with Planck + QUIJOTE MFI.</u> Future uses of Planck data. ESAC, Villanueva de la Cañada (Spain), December 2018.



R. Fernandez Cobos (IFCA - CSIC):

 Forecasts with LiteBird and a low-frequency QUIJOTE-MFI like instrument. CMB foregrounds for B-mode studies (RADIOFOREGROUNDS conference). Tenerife, Spain. October 15-18, 2018.

R.T. Génova-Santos (IAC):

i. <u>AME polarization with QUIJOTE</u>. CMB foregrounds for B-mode studies (RADIOFOREGROUNDS conference). Tenerife, Spain. October 15-18, 2018.

D. Herranz (IFCA - CSIC):

- <u>The Planck multi-frequency catalogue of non thermal sources</u>. VI Meeting on Fundamental Cosmology, Granada, May 28-30, 2018.
- <u>Polarised sources in QUIJOTE maps</u>. CMB foregrounds for B-mode studies (RADIOFOREGROUNDS conference). Tenerife, Spain. October 15-18, 2018.

B. Ruiz-Granados (IAC):

- <u>The QUIJOTE-CMB experiment: First results with the MFI.</u> VI Meeting on Fundamental Cosmology. Granada, Spain. May 28-30, 2018
- 2. <u>The Fan region as seen by QUIJOTE</u>. CMB foregrounds for B-mode studies (RADIOFOREGROUNDS conference). Tenerife, Spain. October 15-18, 2018.

R.A. Watson (Uni Manchester):

1. <u>A 3D model of the North Galactic Spur</u>. CMB foregrounds for B-mode studies (RADIOFOREGROUNDS conference). Tenerife, Spain. October 15-18, 2018.



2.2 Communication and Dissemination Channels

2.2.1 Project website.

The web page of the project (<u>http://www.radioforegrounds.eu</u>) has been available since M3 of the project. During year 2018, we have used it mainly for reporting about publications and presentations, and also for the outreach material.

We use PIWIK (<u>https://piwik.org/</u>), an open-source analytics platform, to monitor the activities in the web page. Since the beginning of the project, we had of the order of 1,400 visits to the site. A map of the distribution of visits per countries is shown here:

Visitor Map



Most of the visits were from European countries, and around 17% of them from America. We also note that half of the visits were concentrated during the period of time that the job positions were open. The number of visits is expected to be larger once we produce the database.

2.2.2 Social Media

We have been constantly updating the results of the project using our profiles in these social media:

- Twitter. <u>https://twitter.com/radioforeground</u>
- Facebook. <u>https://www.facebook.com/radioforegrounds/</u>
- Youtube. <u>https://www.youtube.com/channel/UCGDys6v72rpC4JVTG7Vdnlw</u>
- ResearchGate. <u>https://www.researchgate.net/project/RADIOFOREGROUNDS</u>



Twitter:



ResearchGate:





2.2.3 Publications in Scientific Journals

Accepted:

• <u>ALMA photometry of extragalactic radio sources</u>. Bonato, M., Liuzzo, E., Herranz, D., Gonzalez-Nuevo, J., Bonavera, L., Tucci, M., Massardi, M., De Zotti, G., Negrello, M., Zwaan, M. A. arXiv e-prints 2019, arXiv:1901.08976

 <u>QUIJOTE Scientific results. III. Microwave spectrum of intensity and polarization</u> in the Taurus molecular cloud Complex and L1527. Poidevin, F., Rubiño-Martín, J. A., Dickinson, C., Génova-Santos, R., Harper, S., Rebolo, R., Casaponsa, B., Peláez-Santos, A., Vignaga, R., Guidi, F., Ruiz-Granados, B., Vansyngel, D. T. F., Ashdown, M., Herranz, D., Hoyland, R., Lasenby, A., Martínez-González, E., Piccirillo, L., Watson, R. A. Monthly Notices of the Royal Astronomical Society 2018,

• <u>Multifrequency filter search for high redshift sources and lensing systems in</u> <u>Herschel-ATLAS</u>. *Manjón-García, A., Herranz, D., Diego, J. M., Bonavera, L., González-Nuevo, J.* arXiv e-prints 2018,

 Planck intermediate results. LIV. The Planck multi-frequency catalogue of nonthermal sources. Planck Collaboration et al. Astronomy & Astrophysics 2018, 619 A94

• <u>S-PASS view of polarized Galactic synchrotron at 2.3 GHz as a contaminant to</u> <u>CMB observations</u>. Krachmalnicoff, N., Carretti, E., Baccigalupi, C., Bernardi, G., Brown, S., Gaensler, B. M., Haverkorn, M., Kesteven, M., Perrotta, F., Poppi, S., Staveley-Smith, L. Astronomy & Astrophysics 2018, **618** A166.

 Planck 2018 results. IV. Diffuse component separation. Planck Collaboration et al. ArXiv e-prints 2018.

 <u>Galactic Magnetic Field Reconstruction I. Constraints from polarized diffuse</u> <u>emission: Methodology and simulations</u>. *Pelgrims, V., Macías-Pérez, J. F., Ruppin, F.* ArXiv e-prints 2018,

 Galactic Magnetic Field Reconstruction II. Constraints from polarized thermal dust sky as seen by \$Planck\$. Pelgrims, V., Macías-Pérez, J. F. ArXiv e-prints 2018.

 Forecasting the Contribution of Polarized Extragalactic Radio Sources in CMB\nbspObservations. Puglisi, G., Galluzzi, V., Bonavera, L., Gonzalez-Nuevo, J., Lapi, A., Massardi, M., Perrotta, F., Baccigalupi, C., Celotti, A., Danese, L. Astrophysical Journal 2018, 858 85

• Exploring cosmic origins with CORE: B-mode component separation. *Remazeilles, M. et al.* Journal of Cosmology and Astroparticle Physics 2018, **4** 023

• <u>Exploring cosmic origins with CORE: Mitigation of systematic effects</u>. *Natoli, P. et al.* Journal of Cosmology and Astroparticle Physics 2018, **4** 022

• <u>The State-of-Play of Anomalous Microwave Emission (AME) research</u>. Dickinson, C. et al. New Astronomy Reviews 2018, **80** 1-28



FOREGROUNDS

CMB foregrounds

for B-modě studies

Tenerife, Spain, October 15-18 2018

www.iac.es/congreso/cmbforegrounds18

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CAMBRIDGE

2.2.3 Project Events – International Conference

International congress to discuss the science goals of the RADIOFOREGROUNDS project and the current status of the CMB polarization experiments aiming to detect the imprint of primordial gravitational waves as B-mode patterns.

Sessions in the meeting covered these topics:

Current observational status - CMB polarization experiments. Galactic modelling I: thermal dust. Galactic modelling II: synchrotron and anomalous microwave emission. Extragalactic modelling. Component separation methods. Sky models and forecast for future missions.

With more than 70 international scientists, it hosted the following invited speakers:

Julian Borrill François Boulanger Jean-Francois Cardoso Ettore Carretti Jacques Delabrouille Gianfranco de Zotti **Olivier Doré** Hans-Kristian Eriksen Silvia Galli Joaquín González-Nuevo Shaul Hanany Masashi Hazumi Brandon Hensley Nicoletta Krachmalnicoff Marcos López-Caniego Patrick Leahy **Tobias Marriage** Marcella Massardi Aniello Mennella **Bruce Partridge** Davide Poletti Clem Pryke Giuseppe Pualisi Mathieu Remazeilles Osamu Tajima Kostas Tassis Angela Taylor Matias Vidal Ingunn Wehus



Check all the conference details here: http://www.iac.es/congreso/cmbforegrounds18/



3. REACHED AUDIENCES

	Policy Makers, Regulatory Authorities	Industry	Astrophysics Community	General Public
Tools				
Brochure - Generalist	1	1	1	1
Brochure – Thematic, topic specific	1	v	v	×
RADIOFOREGROUNDS Video		v		×
Media articles - Generalist	1	 Image: A set of the set of the	 Image: A set of the set of the	 Image: A set of the set of the
Media articles – Specialised, targeted, scientific	1	1	1	
Email blasts – Topic specific	1	1	1	
Channels				
Project Website	1	1	1	1
Mailing lists & Contact databases	1	v	v	
Social Media	1	1	1	×
Project Events – International conference	1	1	1	
External Events - Outreach				 Image: A set of the set of the
Publications in Scientific Journals		1	1	
