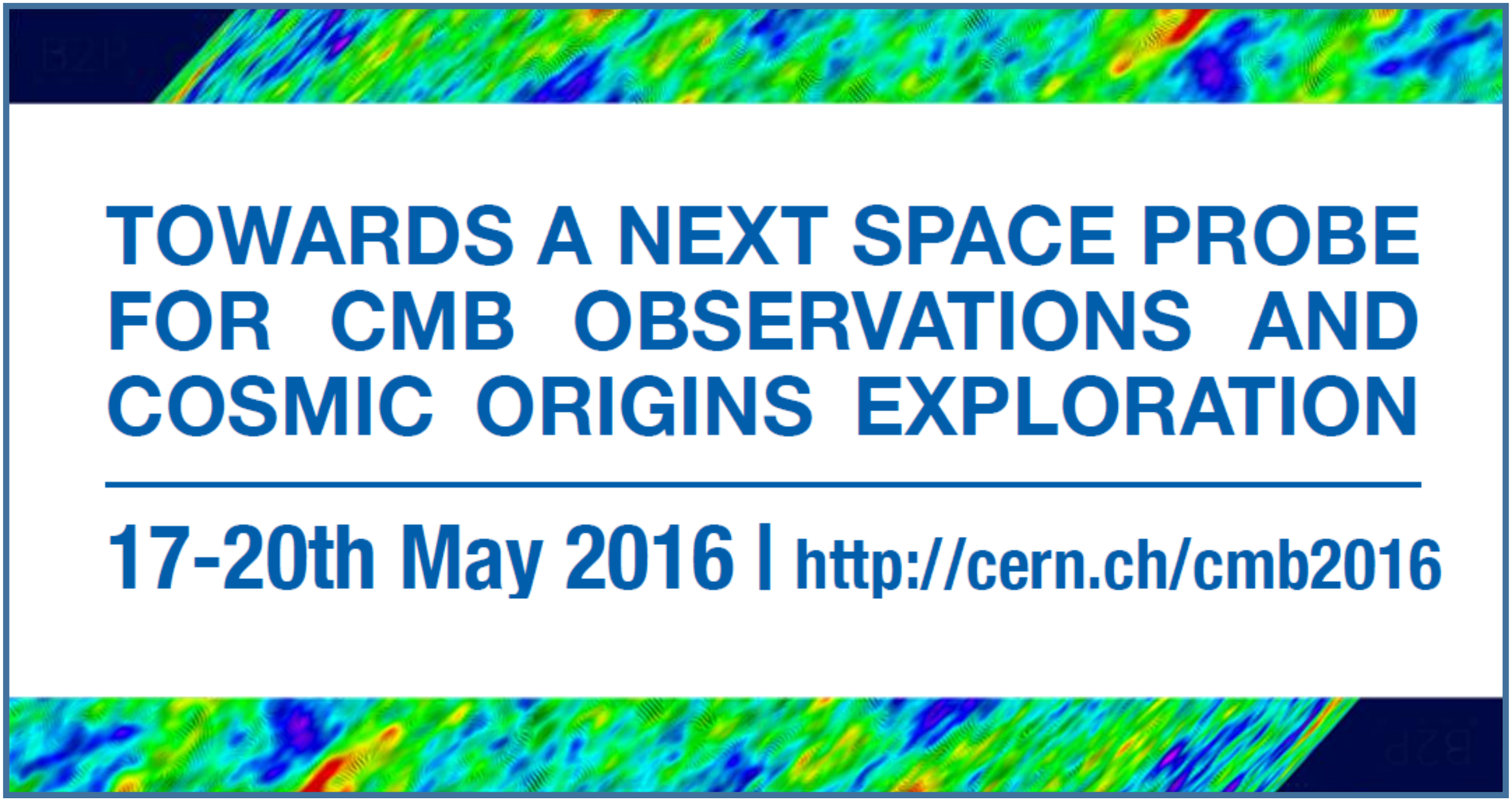
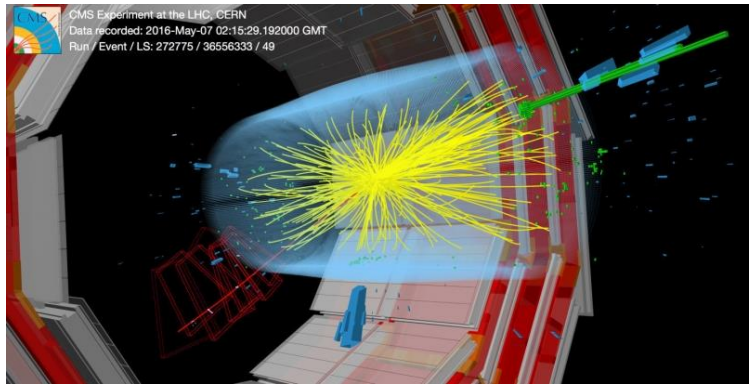
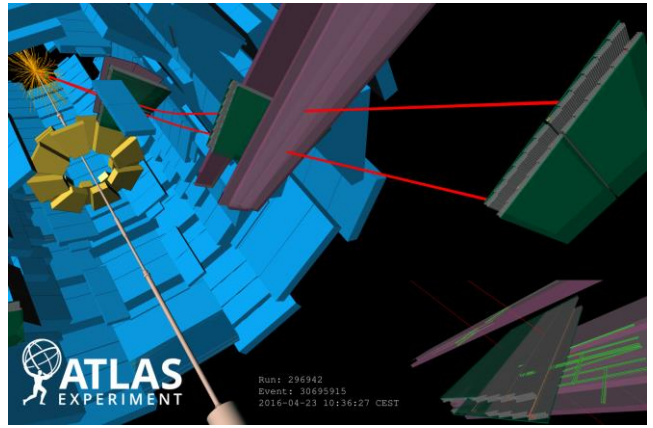
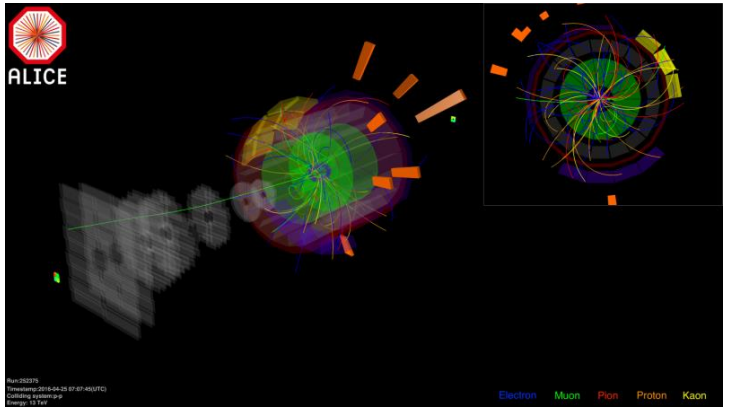
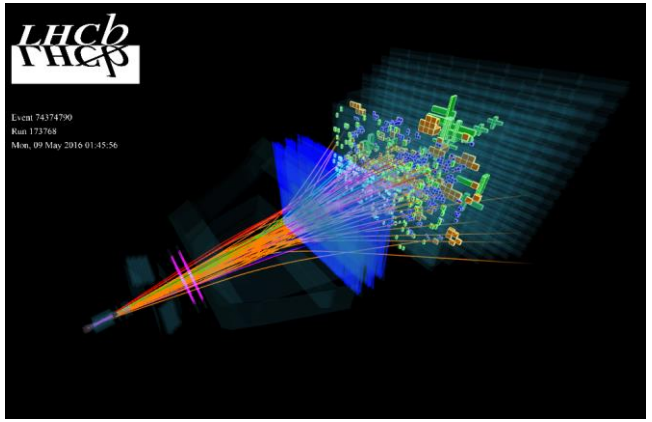

TOWARDS A NEXT SPACE PROBE
FOR CMB OBSERVATIONS AND
COSMIC ORIGINS EXPLORATION
17-20th May 2016 | http://cern.ch/cmb2016

Welcome to CERN



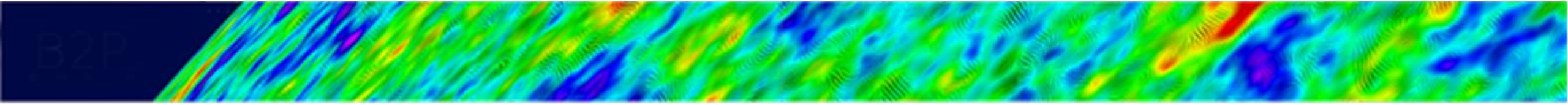






LHC Experiments

http://home.cern/about/updates/2016/05/2016-physics-season-starts-lhc-0



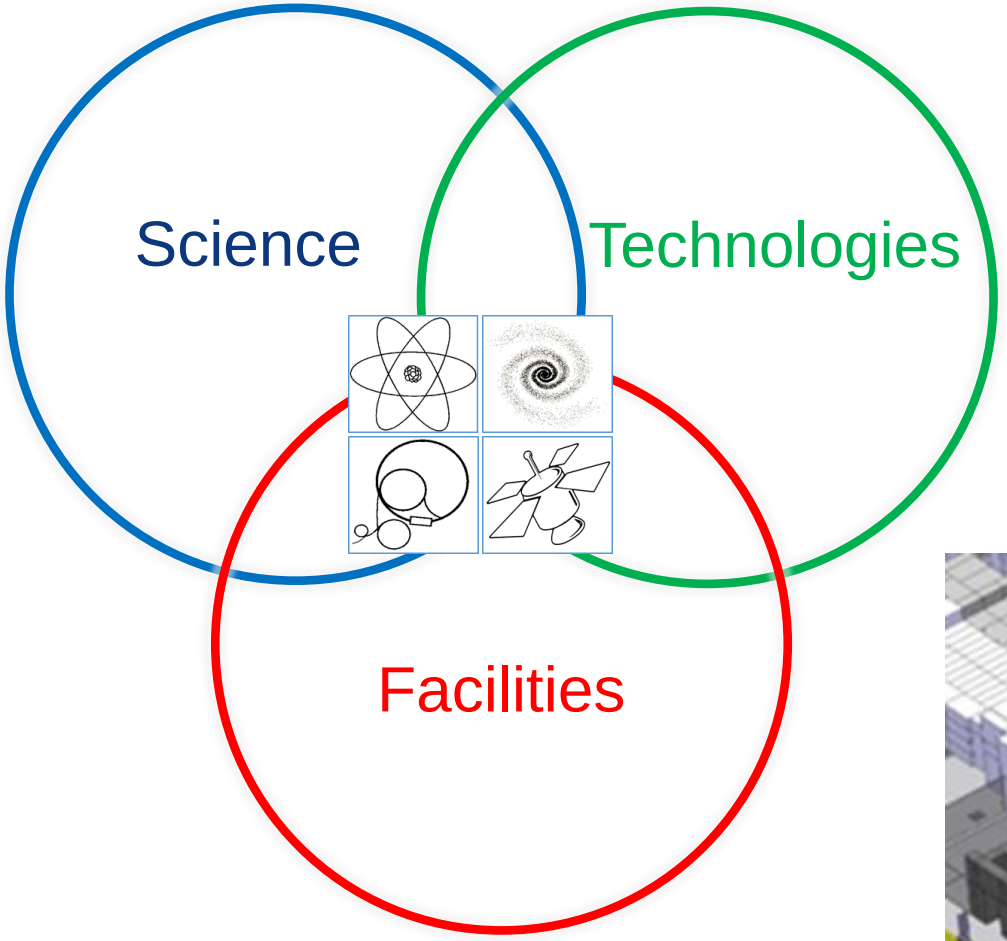
Welcome from the LOC

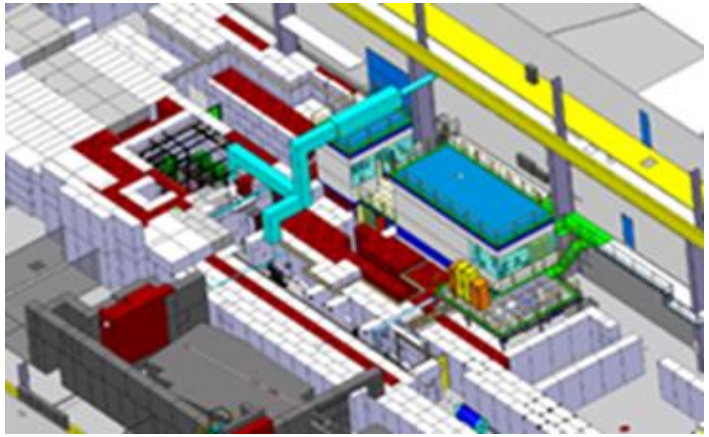
CERN | Knowledge Transfer
Accelerating Innovation

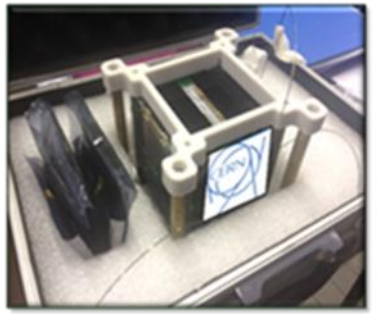
Département de Physique Théorique
de l'Université de Genève

CERN Theoretical Physics

Knowledge Transfer – Aerospace Applications







CERN | Aerospace Applications
Applications aérospatiales

Towards a next space probe for CMB observations and cosmic origins exploration

17-20 May 2016
CERN
Europe/Zurich timezone

There is a live webcast for this event.

Search

- Overview
- Confirmed speakers
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- Registration: Conference + Gala Dinner
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- Videoconference Rooms
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  - CERN access
  - Map to get around CERN
  - Accommodation
  - Internet access - WIFI
  - Local transportation
  - Gala Dinner : Café Papon
- Poster
- Committees
- Support: kt.office@cern.ch

The outstanding success of three generations of space missions dedicated to the study of the Cosmic Microwave Background has delivered invaluable insight into the origins of the universe and the physics of its earliest moments. It has founded a global cosmological model described by the expansion rate, various forms of matter and energy, spatial curvature, and primordial perturbations generated during a period of inflationary expansion. The model's free parameters are now measured to percent-level precision.
This remarkable success sharpens attention on a number of fundamental questions. What are the natures of dark matter and dark energy, accounting for 96% of the energy density of the Universe? Whether a phase of cosmic inflation actually seeded the initial perturbations awaits full demonstration, and the mechanisms that initiated inflation are not well understood or constrained.

Future observations of the CMB will validate or challenge this standard cosmological model, answer these open questions and provide further constraints on the fundamental properties of matter and interactions at energy scales up to twelve orders of magnitude higher than those attainable at the LHC. To exploit this exceptional potential, instruments must be designed with unprecedented performance.

We invite the scientific community to discuss the important issues of such a program during a four-day workshop at CERN. The first two days (May 17-18) of the workshop will be dedicated to the discussion of the science case, of the design of a future European or international CMB polarization space mission, and to the discussion of the synergy and complementarity with ground-based observations and with other cosmological probes. The second part of the meeting (May 19-20) will specifically target the preparation of the European proposal in response to the upcoming ESA call.
Attendance is encouraged for anyone interested. Talks during the first two days are by invitation only, short talk contributions to splinter meetings in the last two days can be submitted to conveners of the sessions.

The workshop is hosted and supported by CERN (Knowledge Transfer Group and Theory Department) and the University of Geneva (Theoretical Physics Department).

Starts 17 May 2016 09:00
Ends 20 May 2016 16:00
Europe/Zurich

CERN
222-R-001 - Filtration Plant

Workshop Logistics

The workshop website www.cern.ch/cmb2016 is constantly updated and is the main reference for:

- scientific programme (plenary and splinter sessions)
- support material (presentations)
- displacements (meeting rooms, gala dinner, visits)

In case of problems contact the Workshop Logistics Coordinator (KT Group Administrative Officer):

Bettina Hamoudi
bettina.hamoudi@cern.ch
or kt.office@cern.ch
Tel. +41-227672623

TOWARDS A NEXT SPACE PROBE FOR CMB OBSERVATIONS AND COSMIC ORIGINS EXPLORATION

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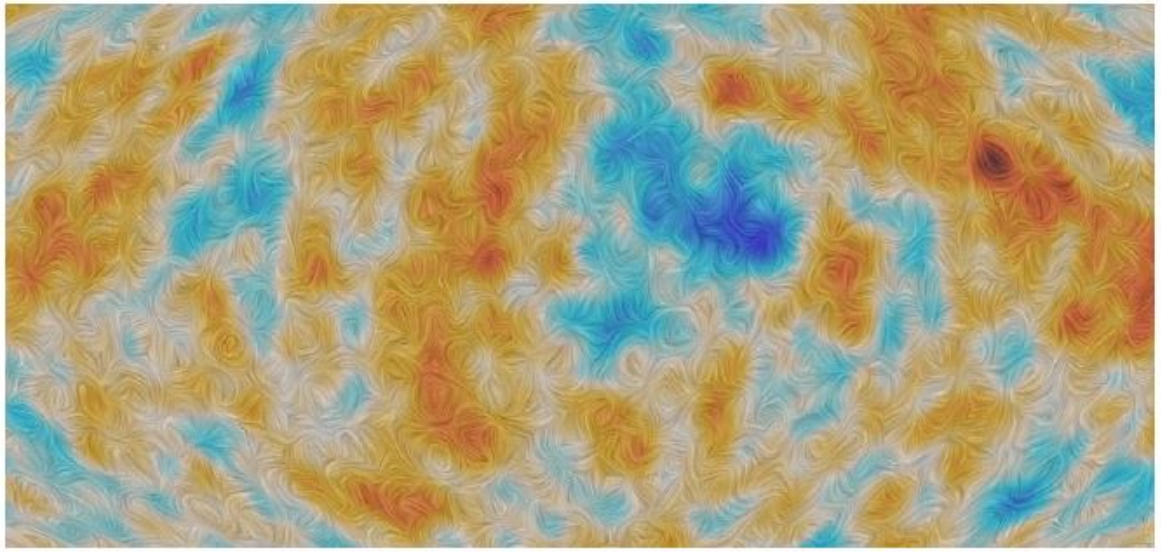

The outstanding success of three generations of space missions dedicated to the study of the Cosmic Microwave Background (CMB) has led to the establishment of the standard model of cosmology. Yet fundamental questions remain open: What are dark matter and dark energy? What is their nature? Did the initial seeds of structure result from an inflationary phase? What are the mechanisms of inflation?

Future observations of the CMB will challenge this model and answer these open questions. To exploit this exceptional potential, instruments must be designed to measure CMB polarisation with unprecedented performance.

17-18th May 2016
Discussion of science case, design & synergy with other experiments for a future European or international CMB polarisation space mission.

19-20th May 2016
Proposal preparation for the upcoming call by the European Space Agency.

SCIENTIFIC ORGANISING COMMITTEE

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