

Action Dark Energy



French initiative to gather LSST, Euclid (mainly) and theoreticians from CEA, INP, INSU, IN2P3

2017: 1st colloquium of 3 days (LAL)

2018: 2nd colloquium of 3 days (IAP)

2019: 3rd colloquium of 2 days (IHP) + 6 workshops

Coordinators:

- Alain Blanchard (INSU, Euclid),
- Philippe Brax (CEA, theoretician),
- Emmanuel Gangler (2017) replaced by Cécile Renault (IN2P3, LSST)



How is it organised:

- collegial decision: 3 coordinators, ~15 members of the science council (each lab, each collaboration, PNCG, PNGRAM)
- At each step, we take care of the equilibrium between Euclid, LSST and other experiments (which may be major but smaller regarding the french involvement level) and theoreticians with a large variety of models. We take care of the equilibrium between CEA, INP, INSU & IN2P3. We also take care of parity and geographical origin (labs).
- > rather constrained but it works !
- currently ~ 180 people in the mailing list. Baseline: participation to at least one colloquium or inscription. Then yearly call inside Euclid & LSST collaborations and in labs for theoreticians.

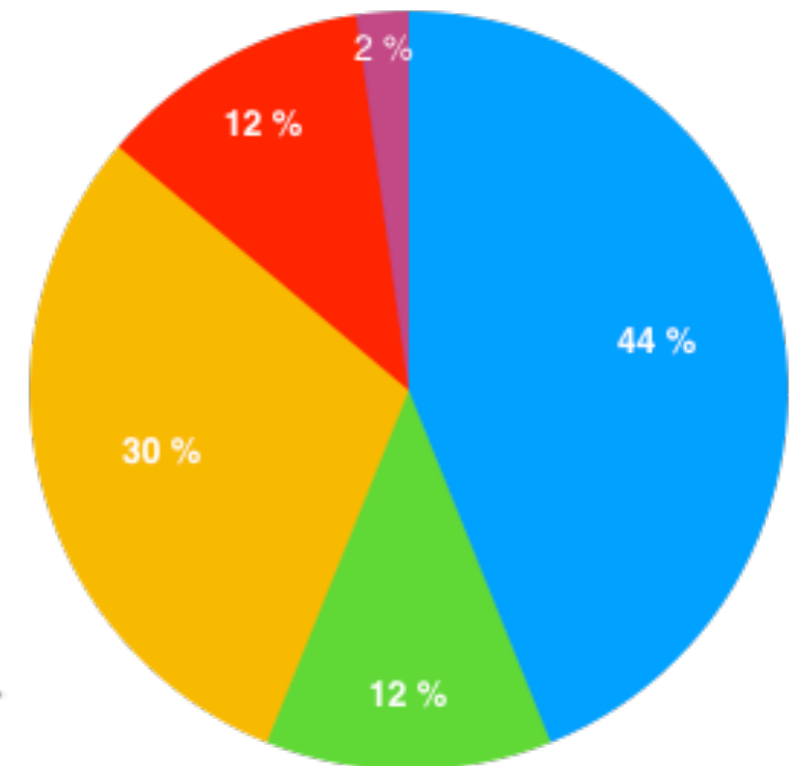
79 IN2P3, 21 INP, 53 INSU, 22 IRFU, 4 foreigners (post-docs are stamped with their PhD lab, they are permanent people).

9 IN2P3 labs, 7 INSU labs (obspm is 1 lab) and more than 10 INP labs (indicative).

~15 people are also the CMB-France list which contains ~ 100 names.

To (un)subscribe etc:

<https://listserv.in2p3.fr/cgi-bin/wa?A0=DARKENERGY-L>



● IN2P3
 ● INP
 ● INSU
 ● IRFU
 ● étranger



It appeared that some deeper coordinated work was needed on **Probes, Tools and Theories**.

To join a group : <https://doodle.com/poll/ykccmmhw3in8xh3c>

Workshops:

—> first workshops in May/June, second workshops in parallel the day before the colloquium

Caveat: it is very difficult to allow effective participation from remote. We should find a way. Renater with Room better than Zoom ?

Few talks and many discussions.

Probes workshop: **June 12** <https://indico.in2p3.fr/event/19288/>

Theories workshop: <https://indico.in2p3.fr/event/19289/>

large participation (23 people), “wait and see” —> positive attitude but not used to work with big collaborations

Tools workshop: <https://indico.in2p3.fr/event/18942/>

More focused (7 in the room + 6 remote). Positive feedback. Will start by a website which will include a wiki to gather references on Simulations, Methods, Visualisation tools, Computing centres, Set of data for validation.



in construction

wiki: <https://action-dark-energy.obspm.fr/>

Tools identification:

1/ Simulations

- data
- ressources
- computing methods

2/ Methods

- data analysis
- results interpretation
- machine learning

3/ Visualisation

- visualisation tools
- data handling

4/ Computing centres

- what do we use, properties

5/ Set of data for validation

- spectro catalogues
- photo catalogues/images



ESA call for scientific problem to be “solved”, after Cosmic Vision, during the period 2035-2050

- DE must be there, even if it would be interesting to have a first answer by Euclid/LSST (& WFIRST) ...
- Brainstorming organised at IAP the May 17th with ~10-15 people from theory, LSST, Euclid
- no idea more exotic than a “Super-Euclid” emerged. Summary linked to this presentation. Mainly $R=1000$, $z=0.5-5$, “full sky”: deeper with spectroscopy for billions of galaxies
- need to write the 20 page white paper by mid-July (deadline August 5th)

call: <https://www.cosmos.esa.int/web/voyage-2050>



Some political aspects:

- this coordination may/should be useful for the next 10 or 15 years to fully cover Euclid & LSST analyses
- at the base level: enthusiasm, participation and cooperation
- at the top level: much more complicated ! Meeting the July 17 between INSU & IN2P3 as an answer to our request in February of a discussion with all our “administrations” to find a way to make durable the Action Dark Energy.
- Berrie/Reynald asked Marc to set up a GdR cosmology which would include CMB & DE
- the CEA invited us to discuss about the Action, but it was this Monday, during Euclid and LSST meetings. Philippe attended. They have heard about the GdR but they think that a regular support by the PNCG with an engagement letter would be more efficient.
- mixing CMB & DE is not wished by the DE people, the CMB people, the PNCG.
- in 2019 we got support from IN2P3 (2k€), PNCG (5k€), INSU PNGRAM (2.5k€), demand to CNES: at least we can work ! Used the colloquium organisation (rooms, food), invited speakers, support for young people.
- **IN2P3 prospectives** "Physique de l'inflation et de l'énergie noire": should be this autumn in Grenoble. We must be active, who knows, it may be not useless Just after the conclusions of the CNES and INSU prospectives