Introduction

Anne-Isabelle Etienvre

P2IO Coordinator

Welcome to the 2nd P2IO SC meeting

- **Goals of this meeting:**
  - *Open session: present to our Scientific council and to our community*
    - P2IO actions:
      - Platforms, post-docs, R&D, teaching and outreach
    - Involvement of P2IO laboratories in LHC and Planck results & future
      - Illustration of only a part of the important scientific results of P2IO labs
      - But time constraints → illustration through these 2 highlights
      - Other topics will be illustrated in future meetings
    - P2IO in its environment (Paris-Saclay)
  - *Closed sessions:*
    - Evolution since last SC meeting
    - First feedback from the Scientific Council and advices

P2IO in a few words

- **A network of 10 laboratories and 2 teams**
  - *Funded by French Government in a general call (2011)*
    - 14 M€ over 9 years (April 2011 – december 2019)
  - *Belong to 4 different organisms*
    - CEA, CNRS, Ecole Polytechnique, Paris Sud University
  - *2000 people (researchers & prof., engeneers, post-docs, PhD students)*
  - *Goals:select and fund common actions to promote our science in an ambitious shared vision*
    - Explore: support for innovative and interdisciplinary initiatives
    - Transform: enhance collaboration between P2IO members, create new common platforms,..
    - Structure: contact point for internal and external collaborations

P2IO in a few words

- **4 scientific themes:**
  - *P1 :symmetries in the subatomic world,*
  - *P2: dark components of the Universe and high energy gamma ray astronomy*
  - *P3 : strongly coupled nuclear matter,*
  - *P4 : formation of stellar systems and conditions for the emergence of life*
- **3 technological themes:**
  - *R1: innovations in accelerator science and their related spinoffs,*
  - *R2 : advanced sensors and spinoffs,*
  - *R3 : data mining and simulation*
- **2 interdisciplinary themes:**
  - *Energy : nuclear energy for the future;*
  - *Health, new methods in imagery and therapies*

P2IO partners geographic localisation

P2IO
Physique des 2 Infinis et des Origines

P2IO governance & evaluation

- **Steering Committee:**
  - *Head of each P2IO member (10 labs + 2 teams)*
  - *Coordination: A.I. Etienvre + Laurent Verstraete (Deputy)*
  - *Main goals: funding decisions, scientific strategy elaboration, calls definition*
  - *1 formal meeting/month (decisions taken by consensus)*
- **P2IO evaluation:**
  - *French Ministry (ANR) : report and meeting once a year*
    - Important step: february 2016 (mid-term evaluation)
  - *Overview report at the funding agencies: once a year*
    - Approves the budget and the overall strategy
  - *Scientific Council*
    - Advises the steering committee

P2IO actions

- **Calls for post-doctoral and PhD students (750 k€ in average)**
  - *Projects pre-selected by a specific committee (CSPD), final evaluation made by the Steering Committee*
    - Criteria: scientific intrinsic quality, synergy between P2IO teams for post-docs, added value for P2IO
    - Candidates have to be validated by the steering committee
    - PhD grants: half-grants only → increase global funding
- **Reports required once a year**
  - *Today: first post-docs selected by P2IO present a poster session + 2 talks*
- **2012 call: 47 proposals**
  - *6 post-doc, 5 half-grants*

P2IO actions

2012 Post-doctoral grants :

- C. Cannes, IPNO+CSNSM (Actinide deposits in ionic liquids).
- C. Caprini, IPhT (Gravitational Waves as a New Probe of the Dark Side of the Universe).
- N. D'hose, SPhN+IPNO (COMPASS : Proton transverse radius measurement).
- D. Bernard, LLR+SEDI (HARPO).
- F. Couderc, SPP+LLR (CMS: Spin-parity of the new boson).
- M. Ollivier, IAS+SAp (Instrumentation for the characterization of the planetary atmospheres)

2012 PhD grants :

- C. Rimbault, LAL (Fast luminosity monitoring using diamond sensors for super luminous B meson factories).
- S. Descotes-Genon, LPT+IPNO (Search for right handed currents in the quark sector)
- M. Urban, IPNO (Collective modes inside the internal crust of a neutron star)
- M. Langer, IAS (Magnetic fields at very large cosmologic scales)
- M. Grana, IPhT (String theory)

P2IO actions

- **R&D small upstream projects (2011, 2013, ..): 500 k€**
  - *Projects are pre-selected by a specific committee (CSRD)*
    - Criteria: innovative project, synergy between labs, added value for P2IO
    - Final selection: steering committee
  - *2011 projects (9) : all well advanced → see poster session (+ 1 talk)*
    - Mid-term report required
  - *2013 call: 9 projects out of 25 have been selected*

P2IO actions

2013 R&D call

Project	Leader	Topic	Budget (k€)
ATLAS-DTBB	P. Schwemling (IRFU)	New digital electronic for the Level 1 Trigger of the ATLAS calorimeter (upgrade)	56
DACTOMUS	N. Delerue (LAL)	Diagnostics and compact beam transport for multistages laser plasma accelerator	50
INGMAR	R. Brunetto (IAS)	Ice and météorites irradiation analysed by VIS-IR reflectance	74.5
HARD	C. Nones (IRFU)	Very low background electronics (HEMT) for bolometers (Edelweiss)	76
HighSPID	Y. Blumenfeld (IPNO)	Light particles identification within high granularity multi-detectors Si (Spiral2 phase2).	67
MICROMEGAS Imager	F. Gunsing (IRFU)	Micromegas 2D for neutron detection (NTOF)	43
PRIVAT	A. Zabi (LLR)	In line selection for data analysis (Higgs couplings) - CMS upgrade.	42.5
SONIM	L. Ménard (IMNC)	New small probes for charged particles detection on molecular imaging based on SIPMs	65
THEOS	N. Leroy (LAL)	Cavities using malleable mirrors for high power lasers.	58

P2IO actions

- **Call for new common platforms (500 k€ , for one or 2 projects)**
  - *Proposals made by our technological groups:*
    - Acceltech, CaptInnov , Radiomatter, Virtual data, Spacetech
  - *First call (2012): 2 projects*
    - CaptInnov : 200 k€ from P2IO + 140 k€ from the Region Ile de France: an illustration of a way to maximize the impact of our limited resources
    - Virtual data (300 k€)
    - See presentations today → impressive collaborative work
  - *Next call: projects will be submitted at the end of the year (funding : 2014)*

P2IO actions

- **Call for platform operations (90 k€)**
  - *Might evoluate (under discussion)*

- **Teaching and outreach (120 k€)**
  - *See L.Verstraete's talk today*

- **Inter-Labex call:**
  - *Idex Paris-Saclay call: 900 k€ (P2IO: 50), for projects involving at least 2 Labex*
    - 10 projects selected out of 52, 4 involving P2IO teams
      - QEAGE: Quantum Effects in Analogue Gravity Experiments (P2IO-LPT/PALM/NanoSaclay)
      - NdS-NbSI: New supraconducting detectors using NbSi (P2IO-CSNSM/PALM)
      - PulseSynth : Femtoseconds pulses synthesis and consistent combination (P2IO-LAL/PALM)
      - VKStars: Fundamental Dynamo mechanisms: from VKS experiment to stellar magnetism (P2IO-IRFU/LASIPS/PALM)

P2IO added value

- **Internal**
  - *Strengthening the links among the various members of P2IO*
    - Projects funded
    - Dialog between directors, committees, working groups, outreach, newsletter ..
- **External**
  - *Important role in the Paris-Saclay context (see Claude Chappert's talk)*
    - LabEx are key actors of the IdEx project → visibility
    - LabEx Steering Committee is strongly involved in the future research department definition
  - *Interactions with other french Labex on these topics*
    - Today: outreach and teaching; future: european calls?
  - *International: Paris-Saclay will be an important cluster → enhance P2IO labs attractivity*

jeudi 12 septembre 2013

09:30 - 10:00 Welcome Coffee

10:00 - 10:30 Introduction *30'* (Salle Galilée)
Intervenant: Dr. Anne-Isabelle ETIENVRE (CEA-Irfu)

10:30 - 11:00 Planck results *30'*
Intervenant: Mrs. Nabila AGHANIM (IAS)

11:00 - 11:20 Cluster mass estimations and their importance for cosmology *20'*
Intervenant: Antoine CHAMBALLU

11:20 - 11:50 CaptInnov Platform *30'*
Intervenant: Dr. Rémi CORNAT (LLR - Ecole polytechnique/IN2P3/CNRS)

12:00 - 14:00 Lunch and poster session *2h0'*

14:00 - 14:40 Paris-Saclay University *40'*
Intervenant: Claude CHAPPERT

14:40 - 15:10 LHC results *30'*
Intervenant: Gautier Hamel de Monchenault (CEA-Saclay/IRFU-SPP)

15:10 - 15:30 Beyond Standard Model with the top quark *20'*
Intervenant: Liza Mijovic (CEA Saclay)

15:30 - 16:00 SRF accelerator cavities *30'*
Intervenant: Guillaume MARTINET (IPNO)

16:00 - 16:30 Virtual Data platform *30'*
Intervenant: Mr. Michel Jouvin (LAL / CNRS)

16:30 - 17:00 P2IO teaching and outreach activities *30'*
Intervenant: Mr. Laurent VERSTRAETE (IAS)