
2023 DUNE-FRANCE Meetings

Coordinates

- **Tuesdays:** 10am Paris
- **Zoom:** [ClickToConnect](#)
- **Indico:** [here](#)

Past logs: [2022](#)

Census: [sheet](#)

September 20th

- **News** (Dario):
 - Testing : AMC (card+firmware) (since 21/8); mockups (more discussion needed when/how/where... FDC meet 16-20/10)
 - Meetings:
 - Past:
 - integration 23/8, technical board 30/8; EB in July; SPSC 1-5/9 (LAr price much higher, electricity cost, ;plans and priorities for 2024 ... discussion to be resumed in Nov)
 - KDP2 follow-up (21/8->5/9)+meet /w DAS 8/9 (ATRIUM 881509 ~14M in 2024 + ~7M of CP)
 - Analyses: protoDUNE sim/reco (4 of them between 25/8 and 15/9), FD sim/reco (11/9, 18/9); analysis discussion France (13/9)
 - Next:
 - KDP follow-up for HR: meet w/ labs direction 21-22/9;
 - DUNE Collb meet (25-29/9) – Jean Sebastien will go in person
 - FDC integration/installation meet SURF 16-20/10 → DD, DA, FC will go in person (others can join via zoom ‘by invitation’)
 - EAP meet 14/11 → in Lyon, but can be followed by zoom
 - Reviews: FDC sub-project CD2/3 DOE 12-15/9
 - AOB:
 - EP – large production, which required a lot of preparation – for both HD and VD (~20M events were produced, nu & anti-nu), produced w/ same version of code. Have a description of sample on [Twiki](#) → follow the relevant meeting at the CM
 - Note: data reconstructed up to hit. (higher level reco needs further tune). To be shown at the LBNC. After, the high-level reco will happen → new challenge computing wise
 - EP: last week ProtoD – [Lino developed a new tool](#) → need to collect use-case → use the doc provided in talk to provide feedb-back
- **Roundtable** (all labs; to be filled before the meeting w/ short status reports)
 - **APC:**
 - News:
 - Change of group leader: Jaime and Camelia (deputy) take over from Thomas
 - We have Tourniquet this week (starting today 11.30am)
 - Collab meet next week: several talks
 - HE WG: ICheong (vtx reco), Henrique (E, ang reco), Pierre (MaCh3 & oscillation), Camille (sterile nu)
 - FD Sim/Reco: Pierre (atm sample production & analysis)
 - PDS cold/warm electronics: possibly a talk (Jaime or Sabrina)

- Paper w/ contribution from group members, on a differentiable TPC simulator, on [arxiv](#) (and sent to journal)
- October – new PhD student (low-E atm nu) Matteo Galli will join
- **Detector development:**
 - Preparing for Module 1 run (required for PRR)
 - Sabrina was at CERN last week
 - calendar changed - looking to start coldbox in December (?)
 - Working on the 'cold-proof' option for the SoF laser driver
- **IJCLAB/Orsay:**
 - **Detector development:**
 - The 48-cards cold flange has been mounted with connectors at IPHC and is now back at IJCLab.
 - Design on the warm flange is still on-going after receiving feedback from IP2I
 - Heating cards (chaufferette) mimicking FE cards are under-production
 - **Analysis activities:**
 - Start of the first ProtoDUNE-VD simulation campaign with cosmics, radiological and electrons (1 GeV)
 - **AOB:**
 - Discussion started about the analysis workshop in November at IJCLab.
- **IP2I/Lyon:**
 - **Detector development:**
 - **Analysis activities:**
 - **AOB:**
- **LAPP/Annecy:**
 - **Detector development:**
 - **Analysis activities:**
 - 50L analysis with Joshua and Coldbox
 - Lardon development towards protodune-vd
 - DP paper internal review
 - **AOB:**
 - Luis Manzanillas (CPJ) and Yann Querlioz (PhD Stereo/dune) arrive on 2nd of October
 - Laura is next co-convener DRA
- **LPSC/Grenoble:**
 - **Detector development:**
 - Some of the tooling for CRP assembly has been delivered, will be mounted and tested in October and could be used for assembly of future prototypes.
 - Cold bath isolation has been done this summer (cover not yet build)
 - Test of cold bath has been done last week. 1300 liters of liquid nitrogen has been used from tank and allow to fill the bath with 850

- Activities:
 - installation of dedicated timing integration setup in EHN1 DAQ, mimicking FD2. Several successfully tested things: capability of DTS to provide 1PPS and 10MHz to WR switch, consistency of time-stamping data, measurements of connection delays, etc
-
- **Roundtable** (all labs; to be filled before the meeting w/ short status reports)
 - **APC:**
 - Detector development:
 - After feedback from FDR, continue to work on finding replacements for CMOS parts. Found 2 op-amps, but they are not direct swaps for CMOS one we are currently using.
 - Producing 24 cards (electronics only) for laser longevity tests that Fermilab plan to start in August.
 - Q: method? →swap it or ...→It might not be the only effect on longevity→because voltage used, not really a test..
 - Ariel participating to PoF / LDO stability testing at Fermilab
 - Analysis activities:
 - Pierre writing an oscillator calculator for the HE WG (per agreement during discussion on sample production+CAF content w/ HE/LBL WG conveners and CAF developer). ICheong finishing homework agreed w/ Pandora team before deciding direction of developments. Camille setting up a sterile neutrino w/ atm nu analysis, starting from Km3Net code of Joao. Henrique working on both Pandora and sterile nu setups, and w/ Mathilde (our intern) finishing a HD vs VD reco comparison.
 - AOB:
 - We'll have a 4th PhD student from fall 2023–Alessandra's project on sub-GeV atm nu (interviews finished, candidate selected and accepted the offer)
 - [DUNE-Fr webpage](#) is up and ready to be filled → brainstormed w/ Elisabetta on the general structure and content. Please check it out, and feel free to send us suggestions.
 - General info for PR purposes: who we are, publications, pictures, talks, etc— whatever considered worth mentioning to broadcast the amount of our contributions to DUNE → public
 - Documentation: ground zero for new-comers (How to-s), and veterans (a log of sorts for things we want to keep easy/fast access to) --> protected as we see fit.
 - NOT meant to be a section that will require much maintenance! → we'll put just the links to existing pages as much as possible.
 - Editing:

- Possibility of new bigger CRTs from Bern group is foreseen and will be discussed
 - Analysis activities:
 - AOB:
 - **LP21/Bordeaux:**
 - Detector development:
 - Analysis activities:
 - AOB:
- **AOB**

14th June


- **News** (Dario):
 -
 - Director Review June 22-23 (big step towards CD-2/-3)
 - EAP 2024 14/11
- **Roundtable** (all labs; to be filled before the meeting w/ short status reports)
 - **APC:**
 - Detector development:
 - Post FDR: re-design of cold transmitter card (looking for replacement for CMOS parts and better mechanical properties)
 - Progress in warm receiver design, agreed tests with Milano
 - Lab at APC flooded :(trying to re start tests now,
 - Analysis activities:
 - slow progress in production of atmospheric samples
 - implementation of Mach3 for analysis:
 - AOB:
 - Camille, Henrique and i Cheong going to Neutrino Summer School at Fermilab
 - **IJCLAB/Orsay:**
 - Detector development:
 - First chimney should be delivered at the end of this week
 - Design of the warm flange PCB has started but challenging due to density of connectors
 - Analysis activities:
 - Beam physics in ProtoDUNE-VD using 1 to 5 GeV electrons to test deposition (Mateo, M2) and reconstruction (Theophile, L3)
 - Michel electrons in ProtoDUNE-VD. Preparation of an analysis strategy based on simulation. Selection completeness and purity (Camilo, M1).
 - Still pending test of Pandora reconstruction on ProtoDUNE-VD with cosmics.

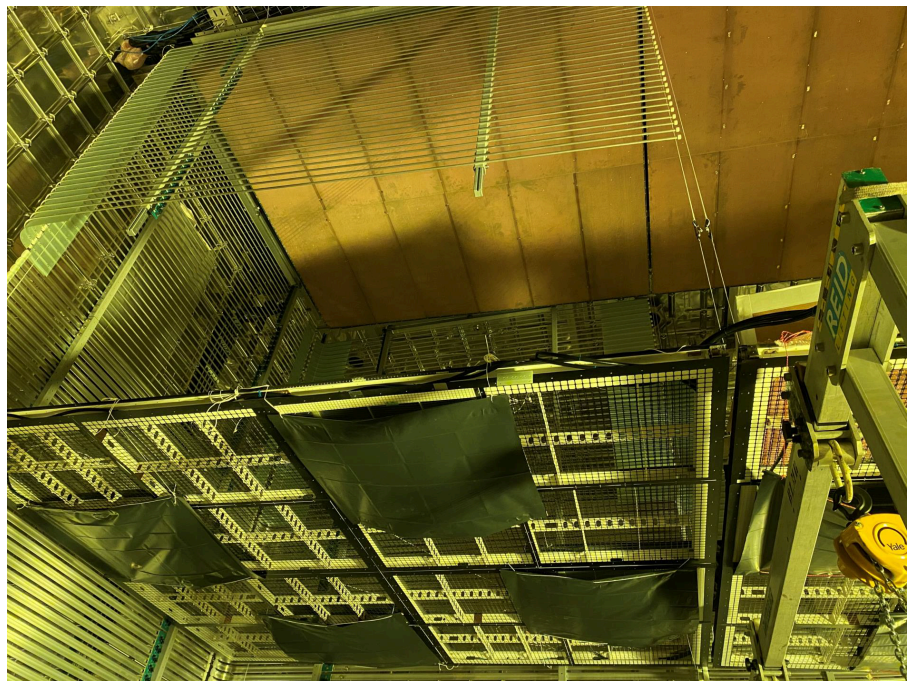
- AOB:
 - Mateo Bedes had been granted a PhD grant, so he is joining the group long term
 - Emile is going to Neutrino Summer School at Fermilab
 - **IP2I/Lyon:**
 - Detector development:
 - Analysis activities:
 - AOB:
 - **LAPP/Annecy:**
 - Detector development:
 - Analysis activities: Presentation of LARDON to the DUNE computing Group : https://indico.fnal.gov/event/59930/contributions/267834/attachments/167909/224617/lardon_lz.pdf
 - AOB: Will present the ProtoDUNE-VD & Codbox at IRN neutrino at Subatech next week
 - **LPSC/Grenoble:**
 - Detector development:
 - Analysis activities:
 - AOB:
 - **LP2I/Bordeaux:**
 - Detector development:
 - Analysis activities:
 - AOB:
- **AOB:**

May 17th

- **News (Dario):**
 - Writing:
 - completion of answers to TDR, sent to LBNC (+some recommendation)
 - April-may: large efforts to prepare the FDR reviews
 - Meets –past:
 - ‘Situation’ of LAr (its availability)– raised and discussed in several meets (present and plans for future)
 - Discussions w/ cern about collab with them (march-april), in particular
 - crp factory in cern and the manpower allocation for it –they want to produce small number (~15%) w/ cern people and lapp supervision (rest in grenoble)
 - next integration test – to assess aspects not dealt in Mod0–superstructures, CRP and HVS installation, PDS fiber routing,
 - Shipments superstructures, chimneys/feb test before PRR,..
 - Integration meet for Mod0 29/march– for bottom CRP

- ResourceReviewBoard 30-31/march – in person at SURF→ Laurent there in person
 - Ana workshop in Paris 18-19/april
 - Annual SPSC review – w/ presentation to open session y F. Resnati
 - VS integration, FD2-TB, ...
 - Detector:
 - Continued CRP tests, cathod 15-15/march; completion of mod0 integration week–work on roof for TDE connections
 - Misc:
 - propagation, from KDP2, of info into project management software.
 - Next:
 - DUNE collb meet –FNAL 22-27/may
 - Will organize a meeting of RS/RT to make a point on the budget in the 1st half of June
 - Q&A: Sabrina– any cleaning envisioned? → DA: yes; also after closure of tso; DD: to discuss more the process, so there is no issue removing the black covers (worries about interferences).--> S: Just don't remove cover before cleaning finished.--> yes, we need to plan cleaning properly (discuss in the integration meeting)
- **Roundtable** (all labs; to be filled before the meeting w/ short status reports)
 - **APC:**
 - Detector development:
 - FDR of the PDS during 18-19/04 (lots of doc preparation, now some complementary technical docs)
 - final PDS to be validates in september/october, working towards final electronics
 - PDS coldbox results and system validation planning talks in CM
 - Analysis activities:
 - Pierre finished implementing the atm-nu MC production scheme into the official DUNE software → there is a call now, within HE WG, for people to submit their requests for large-scale official MC sample they need;
 - Looking also to add into the new CAFs information needed for our analysis → another call in all WGs to people to provide feedback for their analyses of interest;
 - We are also getting involved into sterile-nu searches w/ atm-nu in the FD
 - AOB:
 - Ariel arrived at Fermilab
 - Have a M2 student, Mathilde Ragot, working on analysis of reconstruction performance for sub-GeV atmospheric neutrinos
 - [New PhD position](#) → application deadline is June 5th
 - Several talks planned for the collab meeting: Ariel, Henrique, Pierre, Sabrina

- 
- **IJCLAB/Orsay:**
 - Detector development:
 - FDR done for HV and TDE
 - Cathode installation in progress at CERN:
 - The two cathodes are now supported by the Dyneema ropes
 - Height tuning foreseen next week



- Analysis activities:

- PD-VD simulation validation -> testing the charge reconstruction chain
 - Started charged particle beam simulation work with Slavic and Matéo -> start with electron/muon particles gun with proper starting location/angle w.r.t. to the beam entrance.
 - Look at reproducing the TDR DUNE sensitivity to oscillation parameters using <https://arxiv.org/abs/2103.04797> released information with Matéo.
 - Michel electron reconstruction studies with Camilo
- AOB:
 - M2 student Matéo Bedes working on data analysis -> Doctoral School Application
 - M1 student Camilo Cortes from Universidad de Colombia started this week. Will work on Michel electron analysis with PD-DP data/sims and PD-VD sims.
- Q&A: what is the right height of CRP? → wanted to be able to go to the middle of velo, to reach the liquid level—not clear the liquid level tho; ... ; also the position of the FC wrt to cathod has to be right → to be followed in dedicated meet. Side note: the design of scaffolding does not allow to remove the box w/ scaffolding in place.
- **IP2I/Lyon:**
 - Detector development:
 - Analysis activities:
 - AOB: FDRs, TDR, ...
- **LAPP/Annecy:**
 - Detector development: CERN work; preparing some calculations for FDR
 - Analysis activities: Reconstruction and Analysis of new CRP5 CB data ; Preparation for 50 L data in ~June
 - AOB: VD-CRP performance talk for CM in preparation
- **LPSC/Grenoble:**
 - Detector development:
 - Level Meters :
 - external cables for module0 have been order and should be available in June
 - Electronics are in place and will be powered soon. DCS people will include the level meters command and readout in the slow control.
 - preparing CRP factories (waiting for invoice for clean tent); transportation box from grenoble->surf, and how to handle it from surface to the ground (presentation on this at the CM)
 - Analysis activities: VD implementation in LarSoft; charge reconstruction for separation nu vs anti-nu; expecting atmospheric production to work on reconstruction
 - AOB:
- **LP2I/Bordeaux:**

- Detector development:
 - Analysis activities:
 - AOB:
- **AOB:**
 - **Cedric:** – budget discussions; Please fill the doodle, and also prepare the material in advance
 - **Alessandra:**

DUNE Working Groups – (a selection)

see full information at <https://atwork.dunescience.org/physics/>

WG	Meeting slot	Conveners	Mailing list (@FNAL.GOV)
Long Baseline (LBL)	Monday 5:00 PM bi-weekly	Callum Wilkinson <callum.wilkinson@lhep.unibe.ch> Luke Pickering <picker24@msu.edu>	DUNE-PHYSICS-LBL
High Energy (HE) atmospherics, BNV	Friday 4:00 PM bi-weekly	Lisa Koerner <lwhiteh@central.uh.edu> Yun-Tse Tsai <yuntse@slac.stanford.edu>	DUNE-PHYSICS-PDK
Low Energy (LE) @MeV: SN, solar	Wednesday 5:00 PM bi-weekly	Clara Cuesta <clara.cuesta@ciemat.es> Dan Pershey <pershdawg@gmail.com>	DUNE-PHYSICS-SNB
Beyond Standard Model (BSM) phenomenology	Tuesday 6:00 PM ~bi-weekly	Justo Martin-Albo <jmartinalbo@fas.harvard.edu> Alex Sousa <sousaae@ucmail.uc.edu>	DUNE-PHYSICS-BSM

DUNE Analysis Coordinators: Ines Gil-Botella <ines.gil@ciemat.es>, Chris Marshall <chris.marshall@rochester.edu>

DUNE Working Groups – VD sim/reco related

WG	Meeting slot	Conveners	Mailing list (@FNAL.GOV)
Far Detector Sim/Reco	Monday 4:30 PM bi-weekly	Dom Brailsford <d.brailsford@lancaster.ac.uk> Laura Paulucci <lapaulucci@gmail.com>	DUNE-RECO
ProtoDUNE DRA (Data Reconstruction and Analysis)	Wednesday 4:00 PM weekly	Leigh Whitehead <leigh.howard.whitehead@cern.ch> Tingjun Yang <tjyang@fnal.gov> Wenqiang Gu <wgu@bnl.gov>	DUNE-PROTODUNE-ANALYSIS
ProtoDUNE-VD Sim/Reco	Friday 3:00 PM weekly	Wenqiang Gu <wgu@bnl.gov>	cenf-vd-integration-analysis@cern.ch, dune-proto-sp-dra@LISTSERV.FNAL.GOV
PDS Physics and Simulation	Monday 4:00 PM weekly	Laura Paulucci <lapaulucci@gmail.com>	dune-fd-photon-sp-cnsrt@LISTSERV.FNAL.GOV

April 17-18, Ana Workshop, in person in APC

1. Thoughts on Mod 0 opportunities

- a. **Initiate charged particle beam simulation with ProtoDUNE-VD**
 - i. Start with simple particle gun (electrons, pions, kaons, muons)
 - ii. Muon halo
 - iii. Find and summarize past discussions on beam studies
- b. **Ask Jean Sébastien about CRT panels**
 - i. Position of current panels
 - ii. Add 2 new modules for TOP/BOTTOM drift volumes?
 - iii. Coordinate with photon detection system team (PMTs added on the side)
 - iv. Clock distribution integrated among systems
- c. **Develop simulations at different drift field**
 - i. Space charge, recombination
 - ii. Check CRP voltage margin for the transparency (50L runs in April)
- d. **Energy reconstruction**
 - i. Stopping muon energy loss
 - ii. Michel electrons
 - iii. ...
- e. **Contact physics coordinator/DUNE management** to start thinking about the data taking strategy to coordinate the simulation effort in advance and prepare analysis

2. Computing feedback:

- a. Are you using existing ntuple files?
 - i. aware files are available?
 - ii. variables in the files are useful?
 - iii. variables are missing.....?
 1. theta / phi redefinition
- b. Samples missing?
 - i. ...

3. Instructions feedback: read and followed instructions as presented but some things didn't work for me:

- a.

4. Cookies recipes:

- a. ...

March 22th

- **Indico:** [here](#)
- **News** (Dario):
 - Very busy since CM in Jan
 - Many newcomers: welcome!
 - Lyon: Ginevra (PhD), Leila (permanent)
 - Bordeaux: Cedric, Cecile, Christine, Anselmo (permanents)
 - LAPP: Pablo (permanent)
 - Det. work:
 - Intensive work for installation & prep of Mod0
 - Parallel CB tests of bottom
 - TDR: finished answering comments received in Feb.--> new version sent to LBNC on March 16th
 - Installation schedule delayed by few months→ introduced at the last moment → have to understand the consequences (a full re-evaluation of the schedule has not happened)
 - Meets:
 - Acc. Capabilities Enhancement workshop (Jan-Feb),
 - KDP2 review – March; report confidential, but leaders received copies
 - Remarkable work so far, develop plan is good quality, project well organized, presentations clear, documentation almost complete
 - Few recommendations: about CRP factories, budget, and HR
 - P5 discussion: this week town hall at fnal 21-23
 - LBNC meet this week too, combined w/ P5
 - Some discussion about money: in2p3, cern, us, ...
 - Incoming:
 - SPSC meet w/ annual reviews (april-may, not fixed yet)
 - [Analysis workshop - April 18-19th](#)
 - DUNE CM: FNAL 22-27 May
 - General:
 - pressure kept by US project in completing Mod0 and all FDRs by May, in view of DOE internal calendar related to CD2
 - Mod0 likely to be filled at the beginning of 2024
 - Combination of kdp2, mod0, and fdr-s in the first part of 2023 made a huge work pressure

- **Roundtable** (all labs; to be filled before the meeting w/ short status reports)
 - **APC:**
 - Detector development:
 - We have PDS + CRP4 data! → Henrique can give a presentation (next week)
 - Tons of work on Mod 0 installation (saw us on Dario's pics): most PDS are there, except bottom mem, which can be done later
 - Working w/ milano for daphne
 - Also working on TDR
 - Progressing in lab tests: plan to be in the next CB (in may? it was a proposal but was never accepted; so TBC)
 - Side: people commenting on FC and CRP installation that don't seem to be synchronized. A lot of time double-checking that things are done in the right order. Also, the spanish asked to install also PMs(?) ... (they want to look at tracks with 2 systems)
 - Analysis activities:
 - Coordinating Pandora work w/ the UK groups
 - AOB:
 - Ariel will be in FNAL May->August
 - Davide Moretti defended his Master thesis yesterday- received the best grade!
 - **IJCLAB/Orsay:**
 - Detector development:
 - Thx to JS and Dom for installation of 2nd cathod (2 weeks ago): good job, and good interaction with the PDS group
 - Now the problem of putting the cathode at the right height
 - Analysis activities:
 - Characterization of crp w/ larsoft, and working on validation of ...
 - AOB:
 - Have an M2 student, who started an internship; hope Matteo will start also his thesis in Octb.
 - **LPSC/Grenoble:**
 - Detector development:
 - Things installed for Mod0; just need to put the cables in → should be finished in early april
 - FD2: discussed to monitor the FC, make sure deformation of cryo will not impact much; have to work on max-length to be used for cables (what we use now, ~10m, might not be enough)

- Assembly: working on transportation box; don't have yet a good plan, but validated the materials that we can put in the cavern; validated the external size; have now also access to the update CRU drawing for precise design of the boxes.
 - Analysis activities:
 - Ana of CB data, mainly noise; try to go further on simulation using the new production done on atmospheric
 - AOB:
 - Checking the impact on budget/manpower and planning for building all crp-s in grenoble
 - **IP2I/Lyon:** (see news for more)
 - Detector development:
 - Preparing all material for mod0
 - Doing installation of cables this week
 - Analysis activities:
 - AOB: working in parallel to both ana and FDR
 - **LAPP/Annecy:**
 - Detector development:
 - Challenge to follow what's happening in cryostat
 - Big activity: prepare the bottom crp installation (cool pics)
 - Analysis activities:
 - Working on the bottom CRP data from CB
 - Finalizing the DP paper → start the internal review soon
 - Analysis workshop — agenda (to be sent today) is a draft; if you want to propose smth extra (within the spirit of the agenda) contact us
 - AOB:
 - There is a Chair Professor Junior CNRS position in LAPP → please send it around → deadline is April 14th
- **AOB:**
 - To add Bordeaux in the list next time :D
 - Cedric (not talking in name of Bordeaux):
 - Following kdp review, next phase of work will be to consolidate all the resources we need (human, schedule, ...); have to do this very quick; started doing this from the work done for kdp2
 - Will coordinate this work

Template

Jan Xth

- **News** (Dario):
- **Roundtable** (all labs; to be filled before the meeting w/ short status reports)
 - **APC:**
 - Detector development:
 - Analysis activities:
 - AOB:
 - **IJCLAB/Orsay:**
 - Detector development:
 - Analysis activities:
 - AOB:
 - **IP2I/Lyon:**
 - Detector development:
 - Analysis activities:
 - AOB:
 - **LAPP/Annecy:**
 - Detector development:
 - Analysis activities:
 - AOB:
 - **LPSC/Grenoble:**
 - Detector development:
 - Analysis activities:
 - AOB:
 - **LP2I/Bordeaux:**
 - Detector development:
 - Analysis activities:
 - AOB:
- **AOB:**

Month day

- **News** (Dario):
- **Roundtable** (all labs; to be filled before the meeting w/ short status reports)
 - **APC:**
 - Detector development:
 - Analysis activities:
 - AOB:
 - **IJCLAB/Orsay:**
 - Detector development:
 - Analysis activities:
 - AOB:
 - **LPSC/Grenoble:**
 - Detector development:
 - Analysis activities:
 - AOB:
 - **IP2I/Lyon:**
 - Detector development:
 - Analysis activities:
 - AOB:
 - **LAPP/Annecy:**
 - Detector development:
 - Analysis activities:
 - AOB:
- **Analysis news**
 - ...
- **AOB:**