

2nde DUNE-France Analysis Welcome words

IJCLab
Thibaut Houdy

15 November 2023

Last conclusion

Why a workshop ?




- Shared wish among the DUNE-France community **to gather and increase our common knowledge of DUNE.**
- Need to identify different group topic and interests, need of common training for PhD and newly joining Postdoc.

What about the last one?

- 1 day 18/19th of April 2023 at APC, **22 participants** : indico.in2p3.fr/event/29662/
- Last workshop was about **Vertical Drift simulation and reconstruction** with some description of LAr TPC analysis tools like LArSoft with specific modules (Pandora, Corsika, Wirecell, etc).
- Some remarks about the meeting being **too short and one session should be dedicated to hands-on.**
- Last workshop, we all agreed that on top of the low level analysis (analysis, sim-reco ProtoDUNE-VD), there was the need to address the **high level analysis** (oscillation fit, cross section, systematics, sensitivity to other physic program). This workshop tries to address this wish.

Today's workshop

- 15-17 november at IJCLab, 27 participants : indico.in2p3.fr/event/30796
- Today is about understanding the actual concepts and tools used in the following days.

	Welcome <i>Salle des Conseils, IJCLab Orsay</i>	<i>Thibaut Houdy, Yoann KERMAIDIC</i> 13:50 - 14:00
14:00	Neutrino oscillations: computations, efficiency and rapidity <i>Salle des Conseils, IJCLab Orsay</i>	<i>Joao Coelho</i>  14:00 - 14:45
15:00	Neutrino beams, systematics & ancillary measurements <i>Salle des Conseils, IJCLab Orsay</i>	<i>Laura Zambelli</i> 14:45 - 15:30
	Social <i>Salle des Conseils, IJCLab Orsay</i>	15:30 - 16:00
16:00	Neutrino interactions & cross-sections <i>Salle des Conseils, IJCLab Orsay</i>	<i>Marco Martini</i>  16:00 - 16:45
17:00	Bayesian statistics, inference and sampling methods for neutrino physics <i>Salle des Conseils, IJCLab Orsay</i>	<i>Leila Haegel</i>  16:45 - 17:30

Dinner will take place at Gramophone (27 boulevard Dubreuil, Orsay, near the Orsay-Ville RER train station) and the cost will be covered by IJCLab group.

Today's workshop



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- Tomorrow is about the core of the high level analysis discussions

09:00	Atmospheric neutrino reconstruction <i>Salle des Conseils, IJCLab Orsay</i>	<i>Henrique Souza</i> 09:00 - 09:20
	Event reconstruction with the Photo Detection System in DUNE <i>Salle des Conseils, IJCLab Orsay</i>	<i>Ariel Cohen</i>  09:20 - 09:40
	Tau neutrino reconstruction <i>Salle des Conseils, IJCLab Orsay</i>	<i>Thomas Kosc</i> 09:40 - 10:00
10:00	Discussion session <i>Salle des Conseils, IJCLab Orsay</i>	10:00 - 10:30
	Social: Coffee break <i>Salle des Conseils, IJCLab Orsay</i>	10:30 - 11:00
11:00	ProtoDUNE-VD analyses prospects <i>Salle des Conseils, IJCLab Orsay</i>	<i>Laura Zambelli</i> 11:00 - 11:20
	Neutrino-nucleus interactions and their impact on neutrino oscillations <i>Salle des Conseils, IJCLab Orsay</i>	<i>Sara Bolognesi</i> 11:20 - 12:20
12:00	Social: Lunch	
13:00		

Lunch on Thursday will take place at the local canteen (CESFO, plan to bring about 15€ in cash if you'd like to join).

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12:00	Social: Lunch		
13:00			
14:00	Oscillation measurements at high statistics: statistical challenges and beyond <i>Salle des Conseils, IJCLab Orsay</i>	<i>Sara Bolognesi</i> 14:00 - 14:40	
	Discussion session <i>Salle des Conseils, IJCLab Orsay</i>	14:40 - 15:10	
15:00	Sterile neutrinos in DUNE <i>Salle des Conseils, IJCLab Orsay</i>	<i>Camille Sironneau</i> 15:10 - 15:30	
	Social: Coffee break <i>Salle des Conseils, IJCLab Orsay</i>	15:30 - 16:00	
16:00	Frequentist statistics for neutrino oscillation measurement <i>Salle des Conseils, IJCLab Orsay</i>	<i>Joao Coelho</i> 16:00 - 16:20	
	MaCh3:Bayesian inference of neutrino oscillation parameters <i>Salle des Conseils, IJCLab Orsay</i>	<i>Leila Haegel</i>  16:20 - 16:40	
	Atmospheric neutrino oscillation parameters measurements <i>Salle des Conseils, IJCLab Orsay</i>	<i>Pierre Granger</i> 16:40 - 17:00	
17:00	Discussion session <i>Salle des Conseils, IJCLab Orsay</i>	17:00 - 17:30	
	Session: Wrap-up <i>Salle des Conseils, IJCLab Orsay</i>	17:30 - 17:40	

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- Friday is the hands-on session

09:00	Report from the LArSoft UK tutorial <i>Salle des Conseils, IJCLab Orsay</i>	<i>Yoann KERMAIDIC</i> 09:00 - 09:20
	Stopping particle tutorial <i>Salle des Conseils, IJCLab Orsay</i>	09:20 - 10:00
10:00	First steps with MaCh3 (installation & running) <i>Salle des Conseils, IJCLab Orsay</i>	<i>Leïla Haegel</i> 10:00 - 11:00
11:00		
12:00	Social: Lunch talk: academic careers	
13:00	<i>Salle des Conseils, IJCLab Orsay</i>	12:00 - 13:30

Today's workshop

Any questions?

If not, let's start!