WORKSHOP ON CORE-COLLAPSE SUPERNOVA NEUTRINO DETECTION

Labex UnivEarthS

INVESTISSEMENTS D'AVENIR

USPC Université Sorbonne Paris Cité

OBJECTIVES OF THE WORKSHOP

- Part of the longer term « **Gamma-SN** » **program** organized by the Paris-Saclay University (June-July 2018)

- 1 year ago: proposal to the LabEx (Laboratory of Excellence) UnivEarths (University Paris Diderot) to support an « exploratory » project on CCSN sensitivity with KM3NeT.
- Main goals:
    - sensitivity to CCSN neutrinos with KM3NeT
    - Workshop on CCSN neutrino detection bringing together representatives of different collaborations

AGENDA

Agenda available on **http://gamma-sn-psi2.lmpa.eu**
or directly at **https://indico.in2p3.fr/event/17490/**

	15 - Welcome coffee		
	Salle du Conseil, Institut de Physique Nucléaire d'Orsay		09:30 - 10:00
10:00	**1 - Introduction**	*Alexis Coleiro*	
	2 - SuperNova Early Warning System (SNEWS)	*Alec Habig*	
	Salle du Conseil, Institut de Physique Nucléaire d'Orsay		10:20 - 11:00
11:00	**3 - CCSN neutrino detection with Super-Kamiokande and Hyper-Kamiokande**	*Yusuke Koshio*	
	Salle du Conseil, Institut de Physique Nucléaire d'Orsay		11:00 - 11:40
	4 - CCSN neutrino detection with IceCube	*Segev BenZvi*	
12:00	*Salle du Conseil, Institut de Physique Nucléaire d'Orsay*		11:40 - 12:20

AGENDA

14:00	**14 - CCSN neutrino detection with Borexino**	*Zara Bagdasarian*	
	Salle du Conseil, Institut de Physique Nucléaire d'Orsay		14:00 - 14:40
	5 - Towards detecting extra-galactic supernovae in the antarctic ice	*Sebastian Böser*	
15:00	*Salle du Conseil, Institut de Physique Nucléaire d'Orsay*		14:40 - 15:20
	6 - CCSN neutrino detection with DUNE	*Inés Gil-Botella*	
	Salle du Conseil, Institut de Physique Nucléaire d'Orsay		15:20 - 16:00
16:00	**16 - Coffee break**		
	Salle du Conseil, Institut de Physique Nucléaire d'Orsay		16:00 - 16:30
	7 - Prospects for CCSN neutrino detection with KM3NeT	*Marta Colomer-Molla*	
	Salle du Conseil, Institut de Physique Nucléaire d'Orsay		16:30 - 17:00
17:00			

AGENDA

17 - Welcome coffee

Salle du Conseil, Institut de Physique Nucléaire d'Orsay 09:30 - 10:00

10:00

8 - Prospects for CCSN alert triggering with KM3NeT *Massimiliano Lincetto*

Salle du Conseil, Institut de Physique Nucléaire d'Orsay 10:00 - 10:30

9 - Triangulation method for locating a core-collapse supernova *Ved lar*

11:00

Salle du Conseil, Institut de Physique Nucléaire d'Orsay 10:30 - 11:10

10 - Neutrinos from supernovae and in binary neutron star mergers *Cristina VOLPE*

Salle du Conseil, Institut de Physique Nucléaire d'Orsay 11:10 - 11:50

12:00

AGENDA

14:00	**11 - Physics of supernova neutrino oscillations**	*Antonio Marrone*	
	Salle du Conseil, Institut de Physique Nucléaire d'Orsay		14:00 - 14:40
	12 - Collective Neutrino Oscillations in Dense Neutrino Media	*Sajad Abbar*	
15:00	*Salle du Conseil, Institut de Physique Nucléaire d'Orsay*		14:40 - 15:20
	13 - Discussions		
	Salle du Conseil, Institut de Physique Nucléaire d'Orsay		15:20 - 16:00
16:00	**18 - Coffee break**		
	Salle du Conseil, Institut de Physique Nucléaire d'Orsay		16:00 - 16:30
	19 - Discussions		
17:00	*Salle du Conseil, Institut de Physique Nucléaire d'Orsay*		16:30 - 17:30

The schedule is meant to be flexible so as to allow time for discussions and new topics raised during the workshop.

OBJECTIVES OF THE WORKSHOP

- Some questions that might be addressed:
  - Sources of systematics
  - Sensitivity to directionality
  - Uncertainty on the explosion time
  - Neutrino lightcurve
  - Sensitivity to the neutrino spectrum
  - Alert triggering
  - SNEWs network (false alarm rate, delays, …)
  - Diffuse supernova neutrino background (DSNB)
  - Determination of the neutrino mass hierarchy
  - …

LOGISTICS

- **Presentations:**
  - use your own laptop
  - upload your pdf presentation on the organisation's laptop

- **Lunches:**
  - at the restaurant of the university (5 min walk) - lunch tickets provided.

GROUP DINNER

'Le Pre Verre'

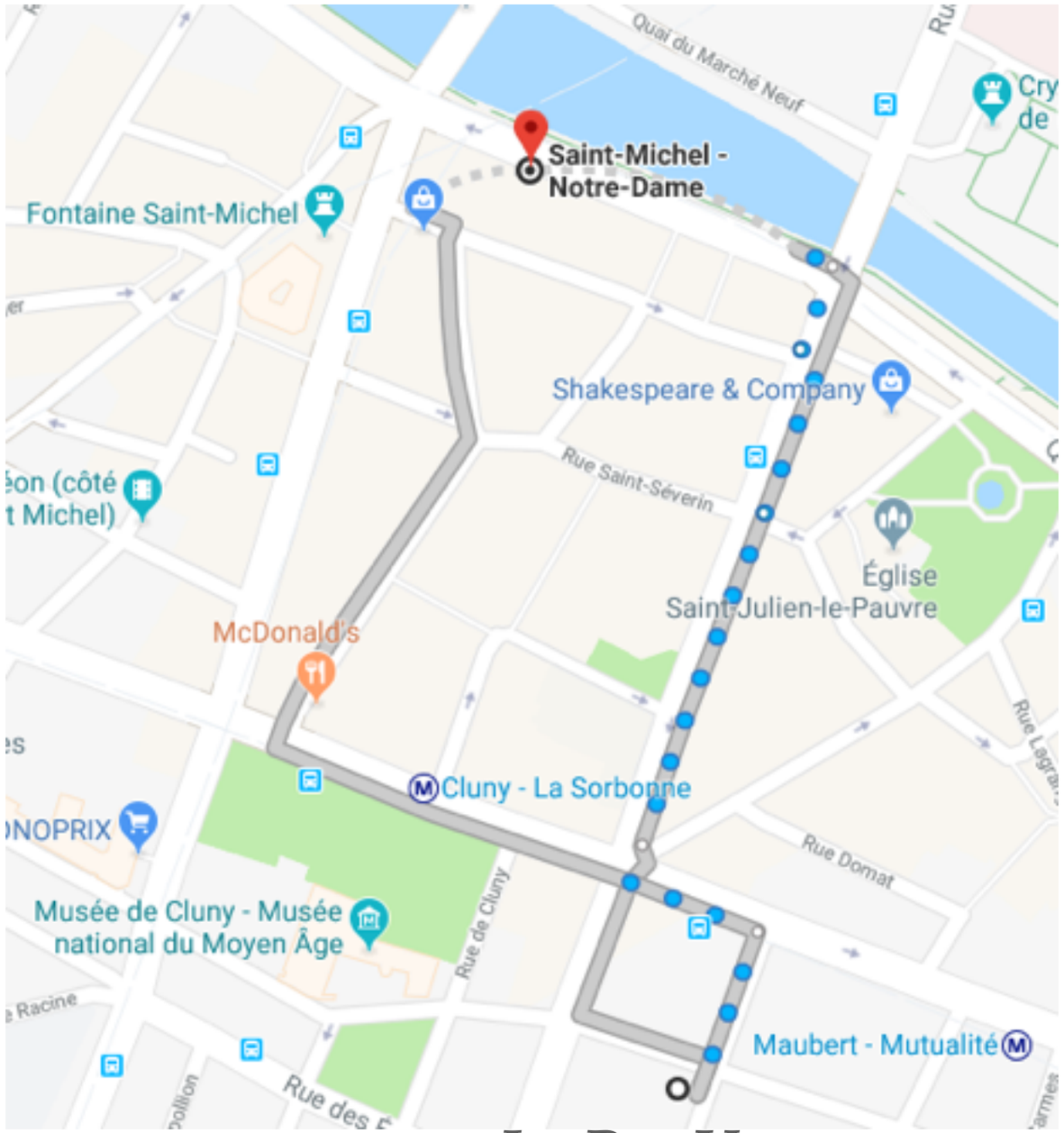
8 rue Thénard, 75005 Paris

tonight at 19:30

Within walking distance from the RER B station Saint-Michel - Notre-Dame

or Metro stations:

Cluny - La Sorbonne / Maubert-Mutualité



Le Pre-Verre