ILANCE

History of the Universe

10^{-32} seconds	1 microsecond	3 minutes	380,000 years	200 million years	400 million years	10 billion years	13.8 billion years
Inflation	**First Particles**	**First Nuclei**	**First Light**	**First Stars**	**Galaxies & Dark Matter**	**Dark Energy**	**Today**
Initial expansion	Neutrons, protons, and electrons form	Helium and hydrogen form	The first atoms form	Gas and dust condense into stars	Galaxies form in dark matter cradles	Expansion accelerates	Humans observe the universe

Time		
10:00	1 - Opening remarks	Prof. Michel GONIN
	2 - Particle Flow Algorithms with DEtection TRansformers for Jet Reconstruction in ATLAS-like Detectors	Mr Maxens Albert
	3 - Physical properties of dust-enshrouded high-redshift galaxies via Data from ALMA and James Webb Space Telescopes	Mr Zacharie Lemoult
	4 - Exploring the Reconstruction of Inclined Extensive Air Showers for GRAND Projec	Ms Pauline Fritsch
11:00	22 - Inverse Problems in Cosmological N-body Simulations : sampling of initial conditions from final states	Mr Lucas Mebille
	6 - Cosmic Ray detection using clustering technique	Ms Sophie Carlier
	11 - Towards a better understanding of Giant Molecular Clouds' evolution	Mr Martin Aloszko
	10 - Hyper-Kamiokande : reconstruction and selection of events	Mr Arthur Choquet
12:00	12 - TBA	Mr Stefan Barbu	Mr Stefan Barbu
	19 - Early Dark Energy as a Solution to The Hubble Tension ?	Mr Theophile Laurent
	Lunch Break (Bento)	
13:00		
	Room 207, 2nd floor, School of Science Building 1 (West) Hongo Campus	12:30 - 13:30

17 - e-/mu- and e-/pi0 classification for HyperKamiokande using Graph Neural Networks	*Mr Gabriel Lenair*
16 - e-/mu- and e-/pi0 classification for HyperKamiokande using Graph Neural Networks	*Mr Samy Niddam*
9 - Forecasting Pulsar Timing Array Sensitivity Needed to Detect Deviations from General Relativity.	*Dr Jonathan Grée*
6 - Predicting γ-ray signal from DM haloes	*Mr Antoine Lucas*
7 - Massive Yang-Mills theory	*Mr Zacharie Lorsin*
8 - Measuring Primordial Gravitational Waves with LiteBIRD	*Mr Mohamed Aït-el-Berkaou*

14:00

15:00

Coffee Break

Room 207, 2nd floor, School of Science Building 1 (West) Hongo Campus   *15:00 - 15:30*

21 - Impact of Clustering Dark Energy on galaxy halo density profiles	*Mr Bastien de Ligondes*
14 - Learning the density field from peculiar velocities	*Mr Baptiste Barthe Gold*
20 - A differentiable adaptive moving mesh method for Euler's equation solving	*Mr Thibaud le Beschu de Champsavir*
13 - Clustering Dark Energy	*Mr Constantin Arthaud*
15 - Environnemental Clustering Study of Modified Gravity Models	*Mr Lucas Da Costa*
18 - Hyper-Kamiokande : low energy neutrinos reconstruction	*Mr Nicolas Moreau*

16:00

17:00

A group photo will be taken just before lunch

5 Founding Partners

For UTokyo

30 March, 2021
Prof. Takaaki Kajita, Director, Institute for Cosmic Ray Research (ICRR)

31 March, 2021
Prof. Hirosi Ooguri, Director, Kavli Institute for the Physics and Mathematics of the Universe (Kavli IPMU)

Shoji Asa
31 march 2021
Prof. Shoji Asai, Director, International Center for Elementary Particle Physics (ICEPP)

31 March 2021
Prof. Masahiro Hoshino, Dean, School of Science

In Paris, on 31/03/2021

For CNRS

Antoine Petit, Chairman – Chief Executive Officer

AGREEMENT FOR THE CREATION OF AN INTERNATIONAL RESEARCH LABORATORY
International Laboratory for Astrophysics, Neutrino and Cosmology Experiments ILANCE

BETWEEN

The **CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE**, hereinafter referred to as "**CNRS**", a public scientific and technological institution, with headquarters at 3, rue Michel-Ange 75794 Paris Cedex 16, France, represented by its Chairman – Chief Executive Officer, Antoine Petit,

AND

THE UNIVERSITY of TOKYO, hereinafter referred to as "**UTokyo**", a national university corporation, whose registered address is 7-3-1 Hongo, Bunkyo-ku, Tokyo, Japan, represented by:
- Prof. Takaaki Kajita, Director of the Institute for Cosmic Ray Research (ICRR);
- Prof. Hirosi Ooguri, Director of the KAVLI Institute for the Physics and Mathematics of the Universe (KAVLI IPMU) under the UTokyo Institute of Advanced Studies (UTIAS);
- Prof. Shoji Asai, Director of the International Center for Elementary Particle Physics (ICEPP);
- Prof. Masahiro Hoshino, Dean of School of Sciences.

I L∧N C E

International Center for Elementary Particle Physics
ICEPP

Institute for Cosmic Ray Research
ICRR

History of the Universe
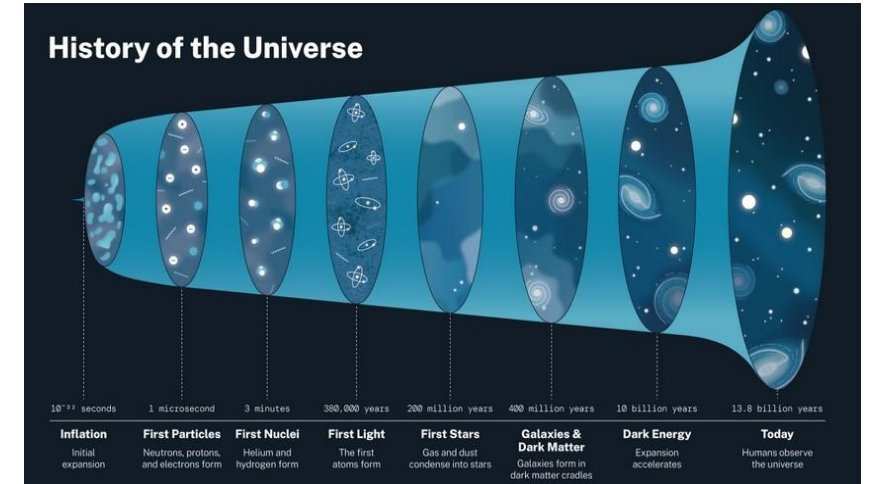
Institute for the Physics and Mathematics of the Universe
IPMU

Institute of Astronomy (IoA) School of Science
IOA