Coordinator's Report (Part 1)

MidTerm Review Meeting, June 24, 2022

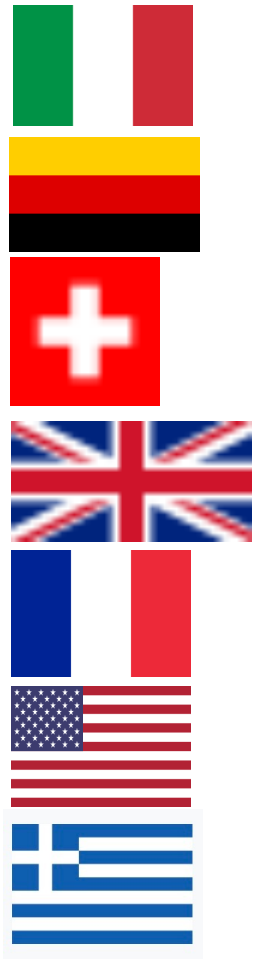
S. Donati

INTENSE is a H2020-MSCA-ITN-2019 effort (GA 858199)
09/01/2020 – 08/31/2024
http://itnintense.df.unipi.it

European Commission

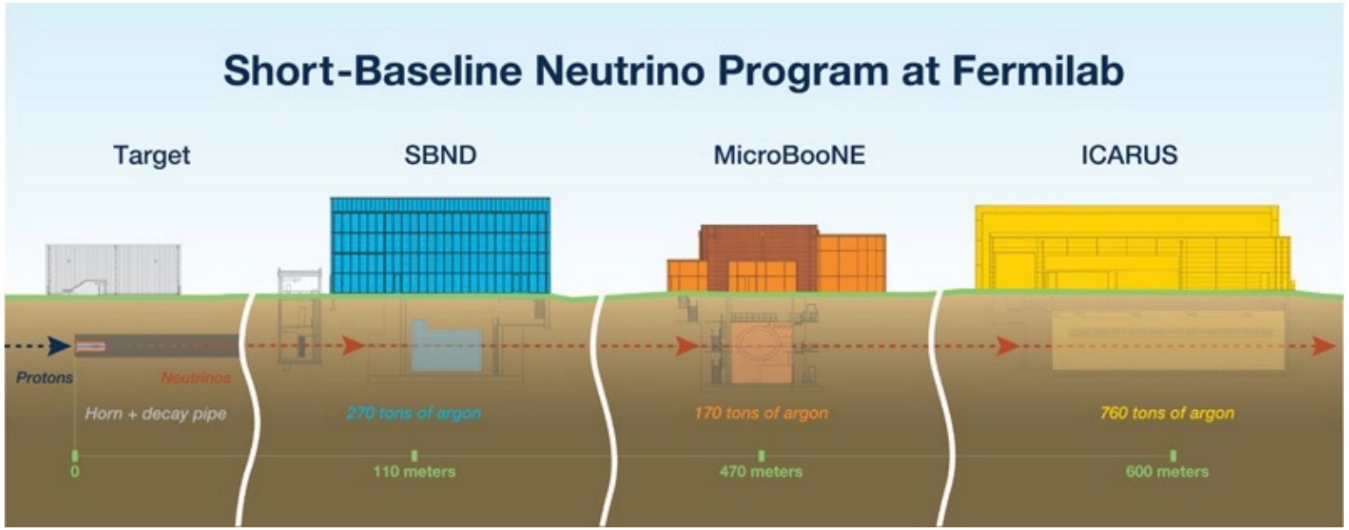
Intense
H2020 MSCA ITN
G.A. 858199

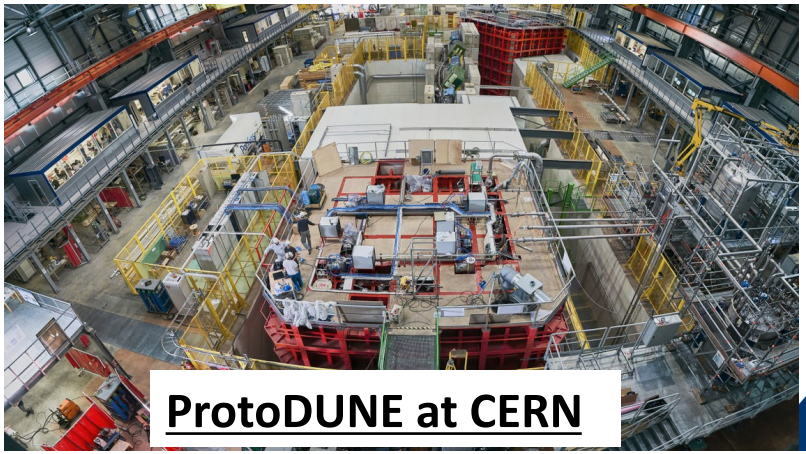
A Cooperative Europe – United States Effort



Cuntry	Beneficiary	Recruitment	
Italy	University of Pisa	1 ESR (36)	1 ESR (17.954)
	University of Padova	1 ESR (36)	
	Istituto Nazionale di Fisica Nucleare	1 ESR (36)	
	Costruzioni Apparecchiature Elettroniche Nucleari	1 ESR (18)	
Germany	University of Mainz	1 ESR (36)	
Switzerland	University of Bern	1 ESR (36)	
	CERN	1 ESR (18.894)	
	Paul Scherrer Institute	1 ESR (36)	
United Kingdom	University of Cambridge	1 ESR (36)	
	University of Manchester	1 ESR (36)	
France	Clever Operation	(Terminated April 2022)	
	Partner		
United States	Fermi National Accelerator Laboratory		
	Yale University		
	Harvard University		
	University of Chicago		
	SLAC		
Greece	Smart Engineering & Management		
France	Clever Operation	As of April 2022	

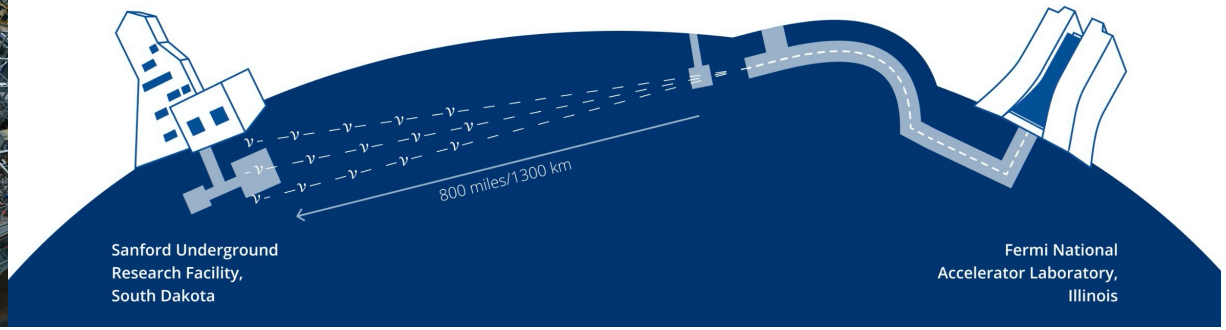
INTENSE: particle physics experiments at the intensity frontier





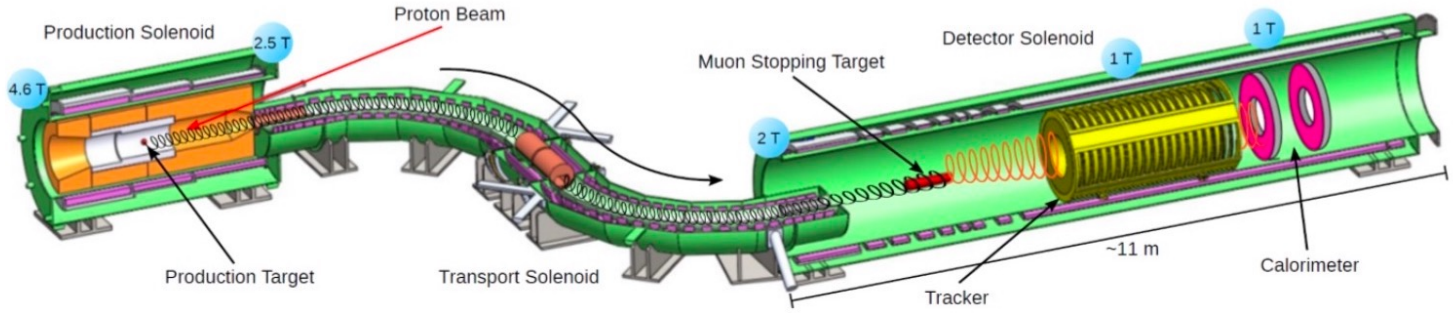
ProtoDUNE at CERN

Deep Underground Neutrino Experiment (DUNE) at Fermilab

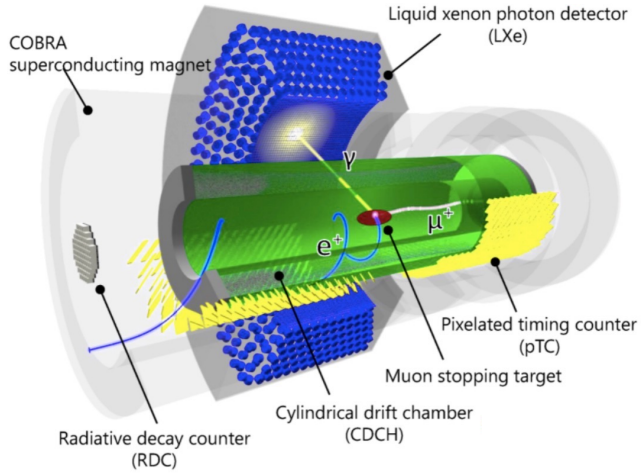


INTENSE: particle physics experiments at the intensity frontier

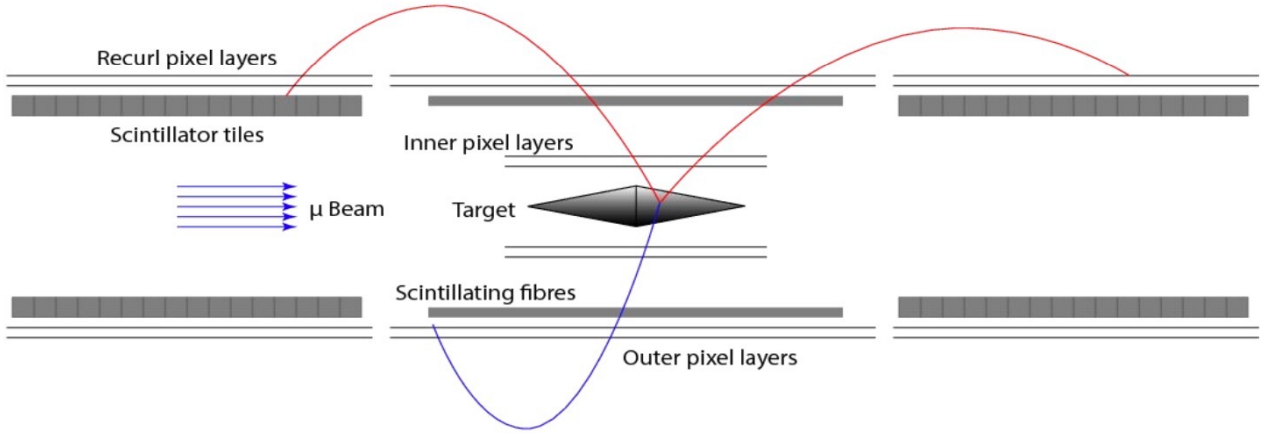
Muon-to-electron conversion experiment (Mu2e) at Fermilab



MEG-II experiment at Paul Scherrer Institute



Mu3e experiment at Paul Scherrer Institute



Recruitment Report – Advertisement of ESR Positions

Adverts published in September 2020 on

- Beneficiaries' web pages,
- INTENSE web site,
- Euraxess and Inspire.

Standard application procedures

- Curriculum Vitae,
- Transcript of Studies Translated to English,
- Statement of Motivations,
- List of Publications,
- Two Letters of Recommendation.

D8.3 Advertisement of INTENSE Early Stage Reseaercher (ESR) Positions (09/2020)

Recruitment Report – ESR Selections

Selection Committees

University of Pisa	Simone Donati	Daniele Gibin	Christian Farnese	Radia Sia	
University of Padova	Daniele Gibin	Christian Farnese	Melissa Uchida	Radia Sia	Simone Donati
Istituto Nazionale di Fisica Nucleare	Angela Papa	Andreas Knecht	Radia Sia	Simone Donati	
Costruzioni Apparecchiature Elettroniche Nucleari	Alessandro Iovene	Radia Sia	Emanuela Barzi	Simone Donati	
University of Mainz	Niklaus Berger	Angela Papa	Alessandro Iovene	Radia Sia	Simone Donati
University of Bern	Michele Weber	Igor Kreslo	Melissa Uchida	Radia Sia	Simone Donati
CERN	Marzio Nessi	Sandro Palestini	Radia Sia	Ingrid Haug	Simone Donati
Paul Scherrer Institute	Andreas Knecht	Angela Papa	Radia Sia	Simone Donati	
University of Cambridge	Melissa Uchida	Leigh Whitehead	Oleg Brandt	Radia Sia	Simone Donati
University of Manchester	Mark Lancaster	Alex Keshavarzi	Radia Sia	Simone Donati	
Clever Operation	ESR Contract transferred to the University of Pisa				

Candidates' Interviews and selections proceeded smoothly, and were completed within the first few months of 2021.

Recruitment Report – ESR Hiring

We had some complications with the hiring in some cases, due to the sanitary emergency which determined restrictions on the issuing of Visas and travelling.

Researcher Declaration

SAVE

Add Declaration

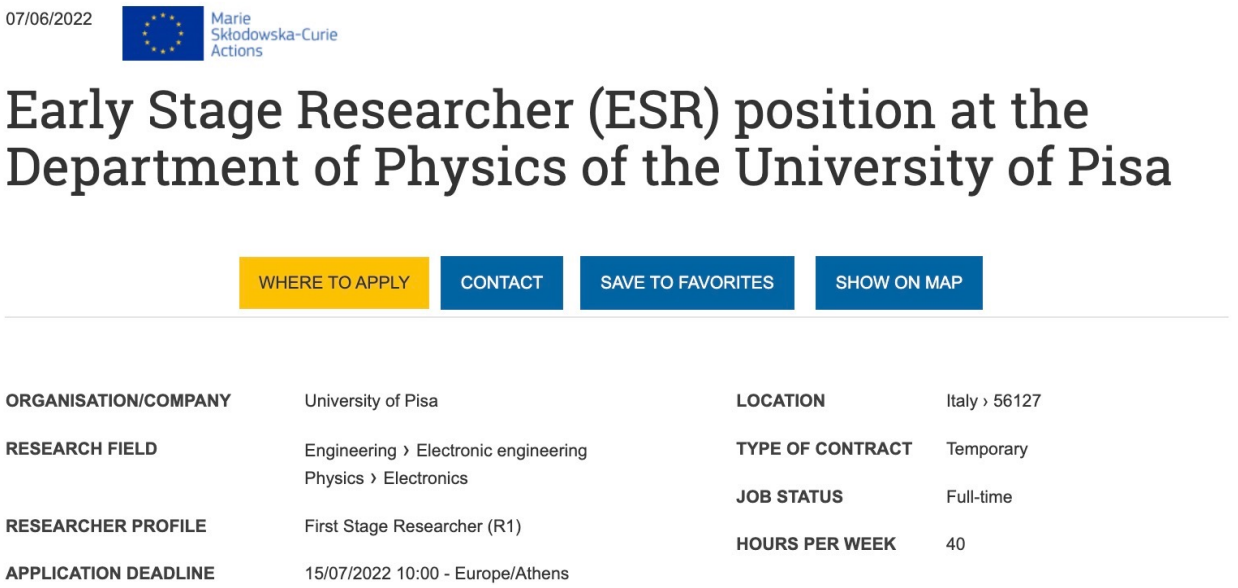
No	Fellow Id	First Name	Last Name	Status	Recruitment Organisation	Start Date	End Date	Working Time Commitment	Duration	Actions
Argentina	1	Matìas	Simonetto	SUBMITTI	Costruzioni Apparecchiature Elettroniche Nucleari Caen Spa	01-09-2021	31-08-2022	Full Time	12	
Italy	3	Giovanni	Dal Maso	SUBMITTI	Paul Scherrer Institut	01-03-2021	29-02-2024	Full Time	36	
Spain	4	Claudia	Alvarez-Garcia	SUBMITTI	The University Of Manchester	01-07-2021	30-06-2024	Full Time	36	
Italy	5	Lorenzo	Uboldi	SUBMITTI	Organisation Europeenne Pour La Recherche Nucleaire	01-01-2021	31-01-2022	Full Time	13	
Japan	6	Natsumi	Taniuchi	SUBMITTI	The Chancellor Masters And Scholars Of The University Of Cambridge	01-09-2021	31-08-2024	Full Time	36	
France	7	Hicham	Benmansour	SUBMITTI	Istituto Nazionale Di Fisica Nucleare	01-09-2021	31-08-2024	Full Time	36	
India	8	Shivaraj	Mulleria Babu	SUBMITTI	Universitaet Bern	01-03-2021	29-02-2024	Full Time	36	
India	9	Haris Avudaiyappan	Murugan	SUBMITTI	Johannes Gutenberg-universitat Mainz	01-10-2021	31-08-2024	Full Time	35	
India	2	Namitha	Chitirasreemadam	SUBMITTI	Universita Di Pisa	07-04-2021	06-04-2024	Full Time	36	
Spain	10	Maria	Artero Pons	SUBMITTI	Universita Degli Studi Di Padova	01-01-2021	31-12-2023	Full Time	36	

D6.1 Define Career Development Plans (10/2021)

Recruitment Report – Opening for one ESR at the University of Pisa

May 2022: Amendment of the Grant Agreement

- We transferred the ESR contract of Clever Operation to the University of Pisa
- Same Training Program
- Same Team of Supervisors (Simone Donati, Radia Sia, Pavel Murat)
- Now the opening is online.



07/06/2022

Marie Skłodowska-Curie Actions

Early Stage Researcher (ESR) position at the Department of Physics of the University of Pisa

WHERE TO APPLY | CONTACT | SAVE TO FAVORITES | SHOW ON MAP

ORGANISATION/COMPANY	University of Pisa	LOCATION	Italy › 56127
RESEARCH FIELD	Engineering › Electronic engineering Physics › Electronics	TYPE OF CONTRACT	Temporary
		JOB STATUS	Full-time
RESEARCHER PROFILE	First Stage Researcher (R1)	HOURS PER WEEK	40
APPLICATION DEADLINE	15/07/2022 10:00 - Europe/Athens		

Work Packages

Eight Work Packages (5 Scientific, 3 Management)

	Work Package	Lead Beneficiary
WP1	Neutrino Detectors	University of Bern
WP2	Neutrino Physics: event reconstruction tools	University of Cambridge
WP3	Neutrino Physics: data analysis	Istituto Nazionale di Fisica Nucleare
WP4	Charged Lepton Flavour Violation Experiments	University of Manchester
WP5	Charged Lepton Flavour Violation: data analysis	Paul Scherrer Institute
WP6	Training	Istituto Nazionale di Fisica Nucleare
WP7	Dissemination and Outreach	University of Manchester
WP8	Management	University of Pisa

Deliverables – Milestones

Deliverables and Milestones completed in due time

		Deliverables and Milestones				
	D8.3	Advertisement of ESR positions	Unipi	Report	Month-1	
	D8.1	MB/SB appointed	Unipi	Report	Month-2	
	D8.2	Consortium Agreement	Unipi	Report	Month-6	
	D8.4	Progress Report	Unipi	Report	Month-13	
	D6.1	Define Career Development Plans	Unipi	Report	Month-10	
	D7.3	Web site	Unipi	Report	Month-5	
	MS10	KickOff Meeting	Unipi	Report	Month-12	
	MS9	Recruitment Completed	Unipi	Report	Month-12	
	MS13	Annual Meeting	Unipi	Report	Month-9	

Management Board – Scientific Board

Management Board

Management Board	
Simone Donati (chair)	University of Pisa
Angela Papa	Istituto Nazionale di Fisica Nucleare
Daniele Gibin	University of Pisa
Alessandro Iovene	Costruzione Apparecchiature Elettroniche Nucleari
Marzio Nessi/Sandro Palestini	CERN
Michele Weber	University of Bern
Mark Lancaster	University of Manchester
Melissa Uchida	University of Cambridge
Niklaus Berger	University of Mainz
Andreas Knecht	Paul Scherrer Institute
Radia Sia	Clever Operation (Terminated April 2022)

Work is progressing smoothly

Scientific Board

	Work Package	
WP1	Neutrino Detectors	M. Weber, M. Nessi, A. Fava
WP2	Neutrino Physics: event reconsrtuctin tools	L. Whitehead, D. Gibin, R. Guenette
WP3	Neutrino Physics: data analysis	A. Menegolli, A. Szeic, M. Uchida
WP4	Charged Lepton Flavour Violation Experiments	M. Lancaster, A. Papa, F. Spinella
WP5	Charged Lepton Flavour Violation: data analysis	A. Knecht, n. Berger, G. Pezzullo
WP6	Training	C. Farnese, R. Sia, A. Papa, M. Uchida
WP7	Dissemination and Outreach	M. Lancaster, C. Vignoli, F. Giordano
WP8	Management	S. Donati (chair)

Work Package 6 - Training

- The ESR have attended the compulsory courses provided by the PhD school they are enrolled to (standard courses in Particle Physics/Theoretical Physics/ Astrophysics/Statistical Analysis of Data/ and many more).
- The ESR have attended international schools and courses of their own choice.
- We have organized a number of events, in connection with complementary initiatives and the ESR were invited to participate (mostly virtual participation)
    - Fermilab 2021 Summer Student School at INFN National Laboratory of Frascati (August 2-4, 2021)
    - International Worskhop on Cosmic-Ray Muography (University of Ghent, November 24-26, 2021)
    - Annual Intense Worskhop (February 2-4, 2022)
    - muEDM Workshop (May 12-13, 2022)
    - Fermilab 2022 Summer Student School at UNIPI (June 18-21, 2022)

Work Package 6 - Training

3-DAY FULL IMMERSION WORKSHOP

- 25 Physics/Engineering students from Italian Universities hosted at INFN - LNF
- Seminars on Feermilab experiments (Muon (g-2), Mu2e, SBN, DUNE and more) and technologies (accelerators, detectors, computing and more)
- Hands-on training by INFN experts / Visits to LNF infrastructures

Work Package 6 - Training

LABORATORI NAZIONALI DI FRASCATI

Day 1 (August 3, 2021)

1. Welcome and startup of the meeting
Dr Stefano Miscetti (LNF)
02/08/2021, 14:30
Meeting Introduction (C...

2. Welcome from LNF director and LNF overview
Dr Fabio Bossi (LNF)
02/08/2021, 14:40
Meeting Introduction (C...

3. The Gran Sasso Laboratories
Prof. Ezio Previtali (LNGS)
02/08/2021, 15:20
Meeting Introduction (C...

4. FERMILAB (History, Present, Future and Summer Student role)
Dr Nigel Lockyer (FERMILAB)
02/08/2021, 16:30
Fermilab history and neu...

5. The Fermilab Neutrino Program (Short and Long Baseline)
Dr Gina Rameika (Fermilab), Stefano Miscetti (LNF)
02/08/2021, 17:10
Fermilab history and neu...

6. The INFN role on the Fermilab Neutrino program
Prof. Sergio Bertolucci (INFN and University... , Stefano Miscetti (Istituto Nazionale di...
02/08/2021, 17:40
Fermilab history and neu...

7. The role of ISSNAF in USA
Prof. Cinzia Zuffada (ISSNAF)
02/08/2021, 18:10
Fermilab history and neu...

Day 2 (August 4, 2021)

9. The g-2 experiment and the INFN contribution
Dr Paolo Girotti (INFN Pisa)
03/08/2021, 09:00
The Fermilab Muon Cam...

10. The Mu2e experiment and the INFN contribution
Dr Stefano Miscetti (Laboratori Nazionali...
03/08/2021, 09:45
The Fermilab Muon Cam...

11. Visit to LNF Sites: DAFNE/KLOE, Syncr. Light, VisitorCenter/Mu2e, Lab experience
03/08/2021, 11:00
Four groups of 5 students each, rotating among sites:

12. Overview of Fermilab work on Magnets
Dr Emanuela Barzi (FERMILAB)
03/08/2021, 14:30
Fermilab Technological ...

13. The mission of FAST R/D accelerator project
Dr Alexander Valishev (FERMILAB)
03/08/2021, 15:15
Fermilab Technological ...

18. Neutrino search in the ICARUS t600 detector
Dr Christian Farnese (INFN Padova)
03/08/2021, 16:30
Fermilab neutrino sessio...

17. Status and commissioning of the ICARUS T600 detectors
Dr Angela Fava (PD)
03/08/2021, 17:00
Fermilab neutrino sessio...

20. Physics with the NUMI beam in the T600 detector
Dr Minerba Betancourt (FERMILAB)
03/08/2021, 17:30
Fermilab neutrino sessio...

19. SBND-PRISM: Sampling Multiple Off-Axis Fluxes with the Same Detector
Dr Marco Del Tutto (FERMILAB)
03/08/2021, 18:00
Fermilab neutrino sessio...

Work Package 6 - Training

INFN LNF
Istituto Nazionale di Fisica Nucleare

LABORATORI NAZIONALI DI FRASCATI

Day 3 (August 4, 2021)

21. From Particle to Wiggle plot: the data analysis of the Muon g-2 experiment
Dr Matteo Sorbara (INFN and University...
04/08/2021, 08:55
The Fermilab Muon Cam...

30. High precision requires a perfect calibration: the g-2 laser system
Dr Elia Bottalico (INFN Pisa)
04/08/2021, 09:20
The Fermilab Muon Cam...

22. High Intensity Muon beams: the difficult path for the Mu2e Calorimeter technical choice
Dr Ivano Sarra (Laboratori Nazionali...
04/08/2021, 09:45
The Fermilab Muon Cam...

23. Visit to LNF Sites: DAFNE/KLOE, Syncr. Light, VisitorCenter/Mu2e, Lab experience
04/08/2021, 11:00

24. Scientific computing at Fermilab
Dr Marco Mambelli (Fermilab)
04/08/2021, 14:30
Computing, TDAQ and Q...

25. Development of a portable TDAQ system
Dr Ryan Rivera (FERMILAB)
04/08/2021, 15:00
Computing, TDAQ and Q...

27. Introduction to Quantum Machine learning
Dr Gabriel Nathan Perdue (Fermilab)
04/08/2021, 15:30
Computing, TDAQ and Q...

28. FNAL cosmic survey: DES, DESI and high-energy transients
Dr Antonella Palmese (FERMILAB)
04/08/2021, 16:30
The Fermilab Cosmic Fr...

29. FNAL cosmic survey: Cosmology with galaxy clusters and the Vera Rubin Observatory (LSST)
Dr Jim Annis (FERMILAB)
04/08/2021, 17:10
The Fermilab Cosmic Fr...

THE INFN-LNF 2021 WORKSHOP REPLACED THE 9-WEEK INTERNSHIP AT FERMILAB WHICH WAS NOT POSSIBLE YET
WE HAVE BEEN DOING OUR BEST TO KEEP THE CONNECTION BETWEEN FERMILAB FUTURE ENDEAVOURS AND THE MASTER STUDENTS ALIVE

Work Package 6 - Training

First Annual Workshop - INTENSE: Particle Physics Experiments at the Intensity Frontier.

2–4 Feb 2022
Europe/Rome timezone

Enter your search term

Contact

simone.donati@unipi.it

antonio.gioiosa@pi.infn.it

Starts 2 Feb 2022, 08:00
Ends 4 Feb 2022, 20:00
Europe/Rome

University of Pisa
Department of Physics
Largo B. Pontecorvo 3, 56127
Pisa, Italy

Simone Donati

Innovative Training Network INTENSE

INTENSE promotes the collaboration among European and US researchers involved in the most important particle physics research projects at the high intensity frontier. Lepton mixings and massive neutrinos offer a gateway to deviations from the Standard Model in the lepton sector including Charged Lepton Flavour Violation (CLFV). The FNAL Short-Baseline Neutrino (SBN) program based on three almost identical liquid argon Time Project Chambers located along the Booster Neutrino Beam offers a compelling opportunity to perform the precision measurement of the neutrino oscillation and the most sensitive search of sterile neutrinos at the eV mass scale through appearance and disappearance oscillation searches. The FNAL SBN program and the CERN ProtoDUNE are a major step towards the global effort in realising the Deep Underground Neutrino Experiment (DUNE). Mu2e at FNAL will improve the sensitivity on the search for the CLFV neutrinoless, coherent conversion of muons into electrons in the field of a nucleus by four orders of magnitude. MEG-II and Mu3e at PSI will improve the sensitivity on other CLFV muon decays. These endeavours foster the development of cutting-edge technologies with spin-offs also outside particle physics.

Fermilab 2022 Summer Students School

18–21 Jul 2022
Pisa
Europe/Rome timezone

Enter your search term

Contact

simone.donati@unipi.it
barzi@fnal.gov
giorgiob@fnal.gov

The Italian Summer Student program at the Fermi National Accelerator Laboratory (Fermilab) started in 1983 within the rapidly-growing collaboration among the University of Pisa, the National Institute of Nuclear Physics of Italy (INFN) and Fermilab. In the first year 3 undergraduate physics students from the University of Pisa worked for 3 months at the construction of the Collider Detector at Fermilab (CDF). In the following almost 40 years, with altogether over 550 physics and engineering students employed in all Fermilab Divisions, the program has become part of the extensive Fermilab educational effort. To spread more broadly the beneficial effects of joining Fermilab research activities among EU students the University of Pisa has included this program among its educational Summer Schools since the year 2015. Accordingly, as of that year applicants can choose to enroll as University of Pisa students for the 9 weeks duration of the Summer School. In 2022 the University of Pisa will provide an additional financial support to the students (UNIPI Special Teaching Projects, 2022). Upon successful completion of the training, the University of Pisa will grant them 6 "CFU" credits (see paragraph below on "Credits"). The University of Pisa Summer School is also part of the Outreach programs of a number of European Projects and Regione Toscana Projects:

MUSE - "Muon campus in US and Europe contribution" (Grant Agreement 690835, H2020-MSCA-RISE-2015),

NEWS - "New windows on the universe and technological advancements from trilateral EU-US-Japan collaboration" (Grant Agreement 734303, H2020-MSCA-RISE-2016),

INTENSE - "INTENSE: particle physics experiments at the high intensity frontier, from new physics to spin-offs. A cooperative Europe - United States - Japan effort" (Grant Agreement 822185, H2020-MSCA-RISE-2018),

INTENSE - "INTENSE: particle physics experiments at the high intensity frontier. A cooperative Europe - United States effort" (Grant Agreement 822199, H2020-MSCA-ITN-2019),

PROBES - "PROBES of new physics and technological advancements from particle and gravitational wave physics experiments. A cooperative Europe - United States - Asia effort" (Grant Agreement 101003460, H2020-MSCA-RISE-2020),

Work Package 7 – Dissemination and Outreach – Web site

- INTENSE web site has a number of Sections to include the relevant information about the Participant Institutions, Organization, Work Packages, JOBS, Dissemination and Outreach and Contacts.
- D7.3 Web site itnintense.df.unipi.it (01/2021)

Work Package 7 – Dissemination and Outreach

- INTENSE staff researchers organise and participate in International Conferences, Workshops dedicated to the development of particle physics experiments and instrumentation and show their work related to INTENSE. This includes writing Conference Proceedings and Articles in specialised Journals.
- A partial list is reported in the dedicated Section of the INTENSE web site http://itnintense.df.unipi.it/?page_id=26
- INTENSE Early Stage Researchers are encouraged to participate as well and show their work, talk to colleagues, and learn from such events as much as possible. Each Early Stage Researcher has inserted a brief List of his/her contributions to Conferences in his/her Talk.

Next in the Agenda

This Session (Coordinator's Report)

- WP 1, «Neutrino Detectors», Michele Weber (University of Bern)
- WP 2, «Neutrino Physics: event reconstruction tools», Daniele Gibin (University of Padova)
- WP 3, «Neutrino Physics: data analysis», Melissa Uchida (University of Cambridge)
- WP 4, «Charged Lepton Flavour Violation Experiments», Angela Papa (INFN)
- WP 5, «Charged Lepton Flavour Violation: data analysis», Niklaus Berger (University of Mainz)

Next Session (Fellows Individual Presentations)

- Claudia Alvarez Garcia (University of Manchester)
- Namitha Chitirasreemadam (University of Pisa)
- Hicham Benmansour (Istituto Nazionale di Fisica Nucleare)
- Haris Avudaiyappan Murugan (University of Mainz)
- Givanni Dal Maso (Paul Scherrer Institute)
- Maria Artero Pons (University of Padova)
- Shivaraj Mulleria Babu (University of <Bern)
- Natsumi Taniuchi (University of Cambridge)
- Lorenzo Uboldi (CERN)
- Mattias Simonetto (Costruzione Apparecchiature Elettroniche Nucleari).