

# NEWS

NEw WindowS on the universe and technological advancements from  
trilateral EU-US-Japan collaboration



## Dissemination and Outreach

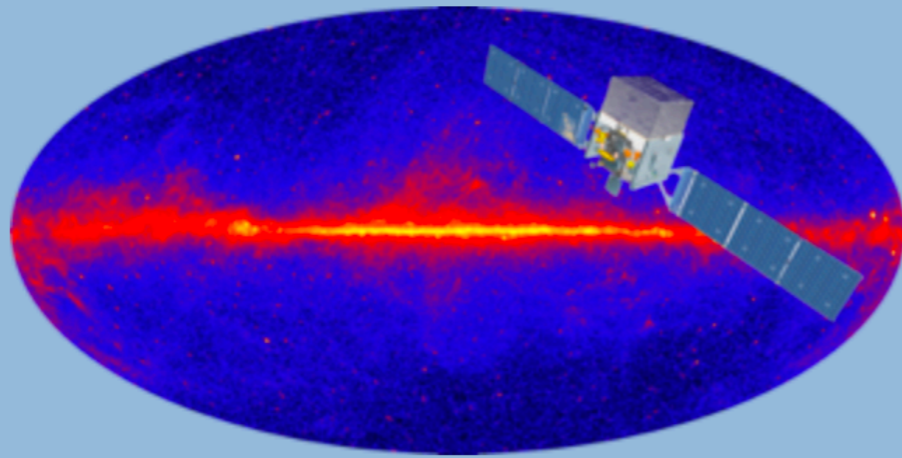
C. Oppedisano, F. Cottone, C. Luongo  
MidTerm Review, Pisa, March 4-5, 2019

Web site: [risenews.df.unipi.it](http://risenews.df.unipi.it)



European Commission

# Outreach ► high-school students



## Fermi Masterclasses 2018

5 April 2018

Bari - Nova Gorica - Perugia - Torino - Trieste



### Full day activity for high-school students

<https://agenda.infn.it/event/13147/>

<https://agenda.infn.it/event/15174/>

### “Alternanza scuola lavoro” (2017)









In the framework of an Italian ministerial project, high-school students have to attend training programmes in a work environment.

Researchers from Physics department of Torino University and INFN Torino involved students both in Fermi data quality monitoring and in the preparation of material for outreach activities (slides, questionnaires, didactical games) related to Fermi.

At the end of the project they presented the material to the Fermi collaboration during a meeting held at CERN.

# Dissemination

<http://risenews.df.unipi.it/publications/>  
<http://risenews.df.unipi.it/presentations>

 URL	<b>M. Ajello et al. (Fermi-LAT Collaboration), "Fermi-LAT Observations of LIGO/Virgo Event GW170817"</b> 📄 1 file(s) 📄 0 download	February 2, 2019	<a href="#">Download</a>
 URL	<b>M. Pearce et at., "Gamma-ray burst localisation strategies for the SPHinx hard X-ray polarimeter"</b> 📄 1 file(s) 📄 1 download	February 2, 2019	<a href="#">Download</a>
 URL	<b>F. Ryde et al. , "Testing a model for subphotospheric dissipation in GRBs: fits to Fermi data constrain the dissipation scenario"</b> 📄 1 file(s) 📄 2 downloads	February 2, 2019	<a href="#">Download</a>
 PDF	<b>Charged Lepton Flavour Violation using Intense Muon Beams at Future Facilities</b> 📄 1 file(s) 📄 2 downloads	January 25, 2019	<a href="#">Download</a>
 PDF	<b>The Mu2e Calorimeter Photosensors</b> 📄 1 file(s) 📄 2 downloads	January 25, 2019	<a href="#">Download</a>
 PDF	<b>The MUonE experiment: a novel way to measure the leading order hadronic contribution to the muon g-2</b> 📄 1 file(s) 📄 2 downloads	January 25, 2019	<a href="#">Download</a>
 PDF	<b>The Mu2e Calorimeter Final Technical Design Report (2018)</b> 📄 1 file(s) 📄 2 downloads	January 25, 2019	<a href="#">Download</a>
 PDF	<b>Expression of Interest for Evolution of the Mu2e Experiment</b> 📄 1 file(s) 📄 2 downloads	January 25, 2019	<a href="#">Download</a>

# Outreach ▶ master students



## Summer Students Italian program at the Fermi National Accelerator Laboratory and at other US Laboratories

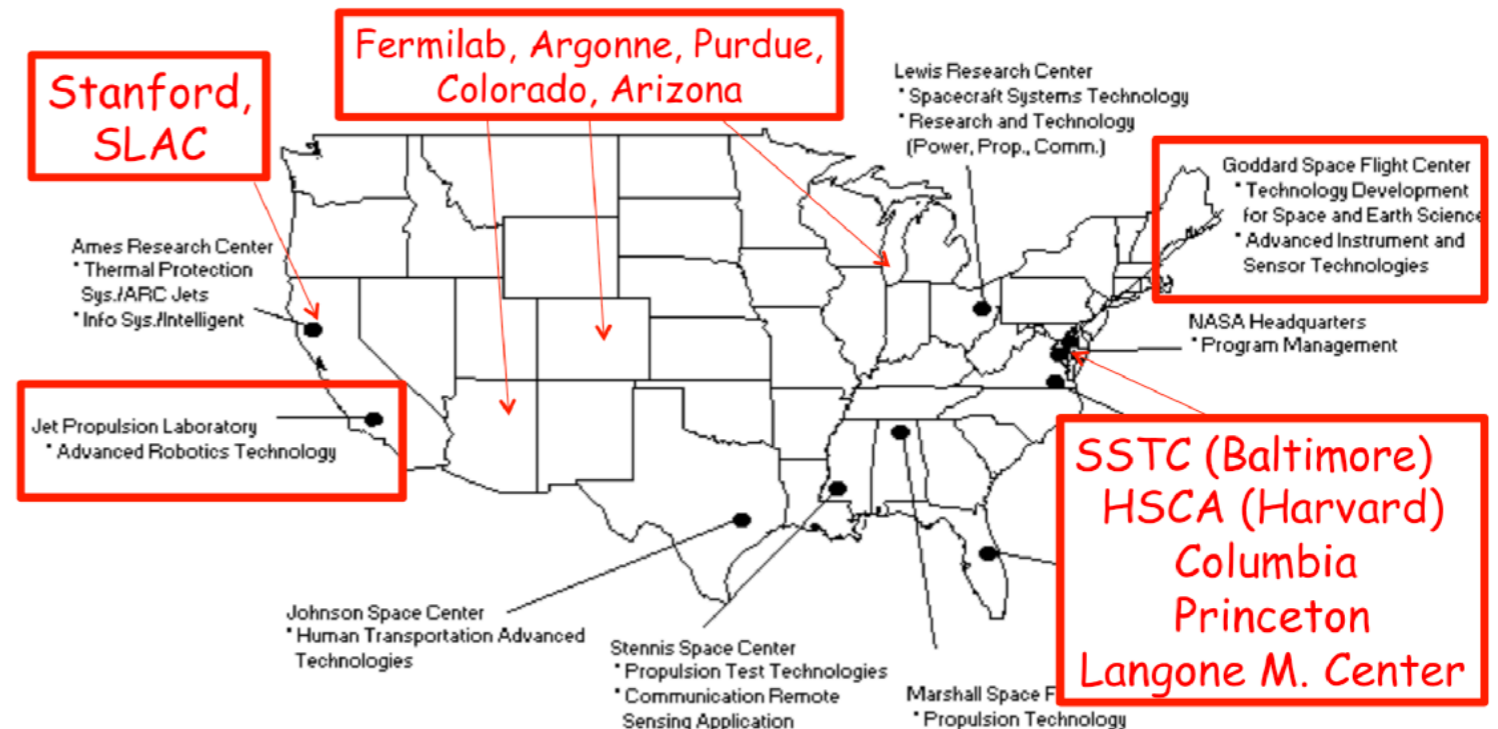
<https://www.pi.infn.it/cdf/ss2015/PisaFermilabSummerSchool.html>

# LIGO

9-weeks internship for Physics, Engineering, Computer Science and Materials Science Master students at Fermilab, Stanford or Caltech

Since 2015 Pisa University endorsed these training programs. Coordination by Prof. Simone Donati

NEWS researchers from Pisa University and INFN organised seminars in Pisa and at FNAL and visits to the FNAL laboratories



# Incontri di Fisica dell'Area Pontecorvo Università di Pisa

## Mercoledì 8 marzo

14,30: Caffè e pasticcini  
15,00: La missione spaziale  
IXPE: una nuova finestra  
osservativa sull'Universo  
Luca Baldini

## Mercoledì 24 maggio

14,30: Caffè e pasticcini  
15,00: Le Onde Gravitazionali:  
la sinfonia del Cosmo  
Walter Del Pozzo

## Mercoledì 21 febbraio 2018

14,30: Caffè e pasticcini  
15,00: Something so  
simple as a star  
Steve Shore

## Mercoledì 10 ottobre 2018

14,30: Caffè e pasticcini  
15,00: Astronomia  
multimessaggero: la nuova  
frontiera nello studio  
dell'Universo  
Massimiliano Razzano

# Outreach → general public

CINFAI CONSORZIO INTERUNIVERSITARIO NAZIONALE PER LA FISICA E DELLE ATMOSFERE E DELLE IDROSFERE SCUOLA DI ALTA FORMAZIONE - COGNE

con il patrocinio di  
Région Autonome Vallée d'Aoste  
Regione Autonoma Valle d'Aosta

## Onde gravitazionali, astronomia e buchi neri l'invisibile sinfonia dell'universo

**INFN**  
Istituto Nazionale di Fisica Nucleare



Tavola rotonda

**Fernando Ferroni**,  
Presidente INFN



**Nicolao Fornengo**,  
Università di Torino e INFN/Torino



**Alessandro Nagar**  
Centro Fermi e INFN/Torino

Sala Maria Ida Viglino  
Palazzo Regionale  
Aosta, Piazza Deffeyes, 1

**lunedì 13 febbraio 2017**  
**ore 18.00**

In collaborazione con



Osservatorio Astronomico della Regione Autonoma Valle d'Aosta  
Planetario di Lignan



Observatoire Astronomique de la Région Autonome Vallée d'Aoste  
Planétarium de Lignan

**ingresso libero**

## TWEET DALLO SPAZIO PROFONDO

onde gravitazionali: teorie, uomini e macchine

Sebastiano Bernuzzi  
(Università di Parma & INFN Milano Bicocca)  
Walter Del Pozzo  
(Università di Pisa & INFN)  
Giancarlo Ghirlanda  
(INAF, Osservatorio di Brera & INFN Milano Bicocca)  
Alessandro Nagar  
(Centro Fermi, INFN Torino & IHES)

Martedì 24 Ottobre 2017  
Aula Magna Tullio Regge  
Dipartimento di Fisica  
Via P. Giuria 1, Torino  
Ore 17:00  
Ingresso libero



# Outreach → general public

UNIVERSITÀ DI PISA  
Dipartimento di Fisica

INFN  
Istituto Nazionale  
di Fisica Nucleare

BRIGHT  
LA NOTTE EUROPEA DELLE RICERCATRICI E DEI RICERCATORI IN TOSCANA

## Dai quark all'Universo

*Le nuove frontiere della fisica moderna*

L'evoluzione del cosmo  
raccontata  
dai ricercatori  
del Dipartimento di Fisica

**Interverranno**

Walter Del Pozzo  
Massimiliano Razzano  
Ettore Vicari



**Venerdì 28 settembre 2018 - ore 21:00**  
Aula Magna "F.lli Pontecorvo"  
Polo Fibonacci - Largo B. Pontecorvo, 3 (Pisa)

Associazione Culturale  
★  
← INTENTI →

## Ciclo Arte e Scienza

Con il patrocinio dell'Assessorato alla Cultura  
Sala Consiliare del Comune di Montecatini Terme



**Giovedì 15 Giugno ore 21**

### "Astronomia gravitazionale: l'alba di una nuova scienza"

INCONTRO con **Gianluca Gemme**, responsabile nazionale **Virgo**,  
sull'implementazione dell'interferometro di Cascina (Pisa).  
Introduce *Massimo Fochi* - coordina *Gianna Porciani*.



COMUNE DI MONTECATINI TERME

# Outreach → general public

Torino, Teatro Colosseo  
sabato 20 gennaio  
ore 17.30

**Giovedì Scienza**

**Racconto cosmico**  
Spazio, materia e gravità nell'evoluzione dell'universo

**Introducono**

- Fernando Ferroni
- Antonio Mignone
- Valeria Talarico
- Neri Marcorè
- Liborja Petrucci
- Maria Giulia Scarcella

Ingresso libero  
fino esaurimento posti

Introduce  
F. Ferroni, Presidente  
Istituto Nazionale Fisica Nucleare

Narra  
R. Battiston, Università di Trento  
già Presidente Agenzia Spaziale Italiana

Protagoniste  
Le leggi della fisica

**LE STELLE DEL CINEMA**  
AVVENTURE SCIENTIFICHE SUL GRANDE SCHERMO

11 febbraio 2019 Aosta - Cittadella dei Giovani  
Ore 17.30 Sala del Teatro  
Ingresso gratuito Via Garibaldi 7





# Nobel prize colloquia

## Un giorno con il Nobel

Dai neutrini alle onde gravitazionali

PERUGIA  
13 Febbraio  
2017

Incontro con  
il Premio Nobel  
per la Fisica 2015

**Takaaki KAJITA**



ORE  
11

**CONFERIMENTO LAUREA HONORIS CAUSA  
A TAKAAKI KAJITA\***  
*Aula Magna - Palazzo Murena - Piazza dell'Università, 1*  
\* Per informazioni e prenotazioni gruppi scolastici Tel: 075/5852014

**LAUDATIO ACADEMICA**  
*Helios VoCCA - Dipartimento di Fisica e Geologia ed esperimento Virgo*

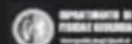
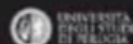
**LECTIO MAGISTRALIS**  
*Takaaki Kajita - Premio Nobel per la Fisica 2015*  
*"La scoperta della massa dei neutrini a Kamioka"*  
*in inglese*

**CONFERIMENTO LAUREA**

ORE  
18

**SALUTI INTRODUTTIVI**  
*Sala dei Notari*  
*Andrea Romizi - Sindaco di Perugia*  
*Franco Moriconi - Rettore Università degli Studi di Perugia*

**LECTIO MAGISTRALIS**  
*Takaaki Kajita - Premio Nobel per la Fisica 2015*  
*"Le onde gravitazionali e la nuova astrofisica"*  
*in inglese con proiezione simultanea*



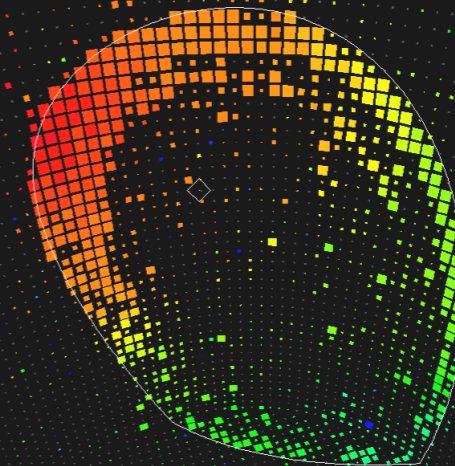
Università  
degli Studi  
di Torino



in collaborazione con



## I SEGRETI DEI NEUTRINI: PARTICELLE CAMALEONTICHE



**TAKAAKI KAJITA**  
Premio Nobel per la Fisica 2015

2 luglio 2018  
Aula Magna Cavallerizza Reale  
via Verdi 9 Torino  
ore 20.45  
(ingresso dalle ore 20.00 fino a esaurimento posti)

L'immagine mostra la ricostruzione del passaggio di un neutrino all'interno di SuperKamiokande

# Outreach → general public

VIRGO-EGO laboratory visited by nearly 8000 people per year  
(75% high-school visits)



# Outreach ► general public

Gubbio Scienza July 2017  
Science Festival and International  
Conference on ICT and Sustainability

2000 visitors in 10 days

Waves Hunters: Science Show



The Einstein's Island [www.isoladieinstein.eu](http://www.isoladieinstein.eu)  
International Science shows festival  
Polvese Island – Umbria region Central Italy  
**12.000 visitors** from allover Italy  
during the first week.-end of September  
Presentation of a science show on gravitational waves



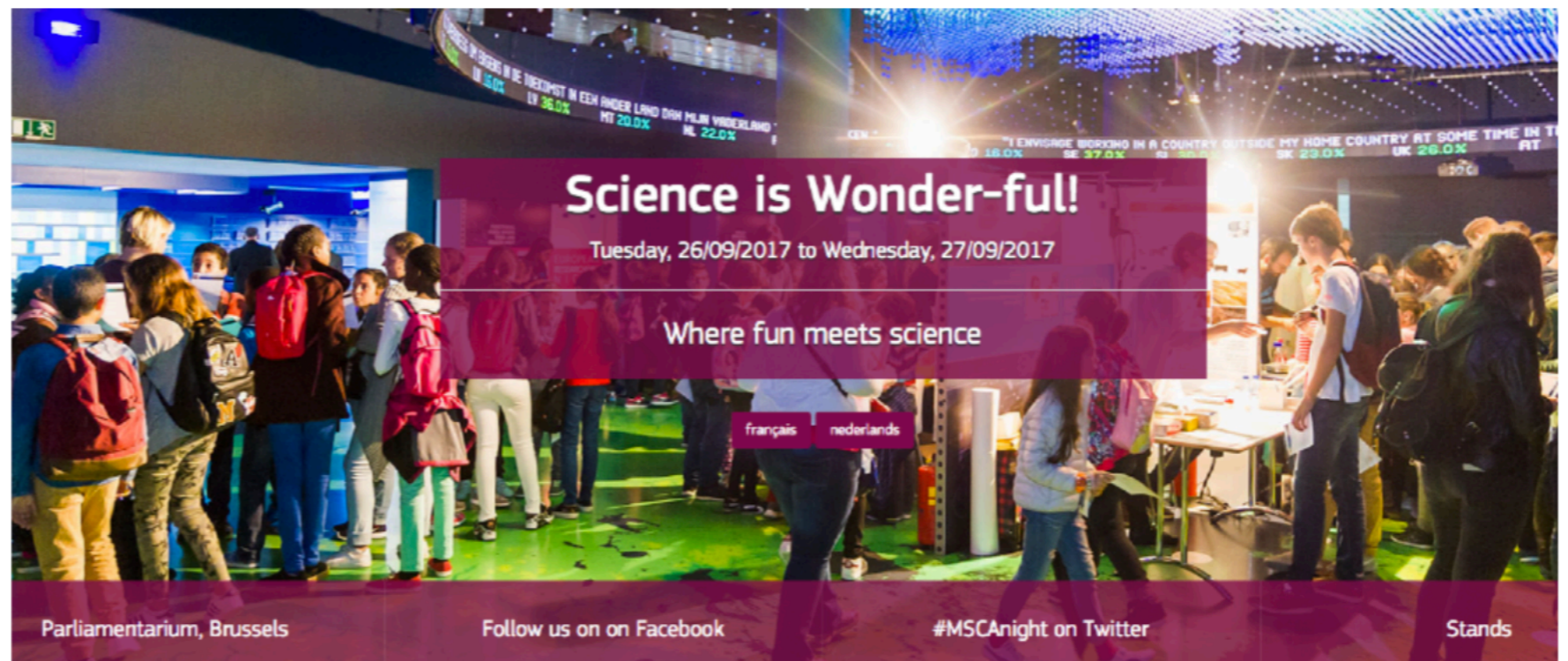
Fosforo [www.fosforo.it](http://www.fosforo.it)  
Science Festival  
Senigallia – Le Marche region Central Italy  
**10.000 visitors** in one week of events  
Presentation of a science talk-show on  
gravitational waves



# European Researcher's Night I



**Wave hunters: surfing space-time waves**



SHARPER at Parliamentarium in Bruxelles - September 2017

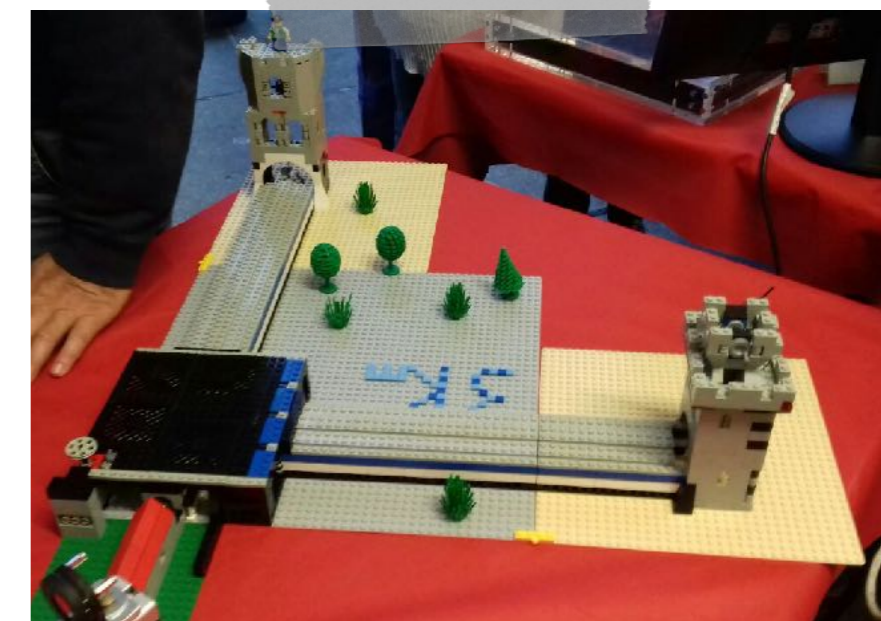
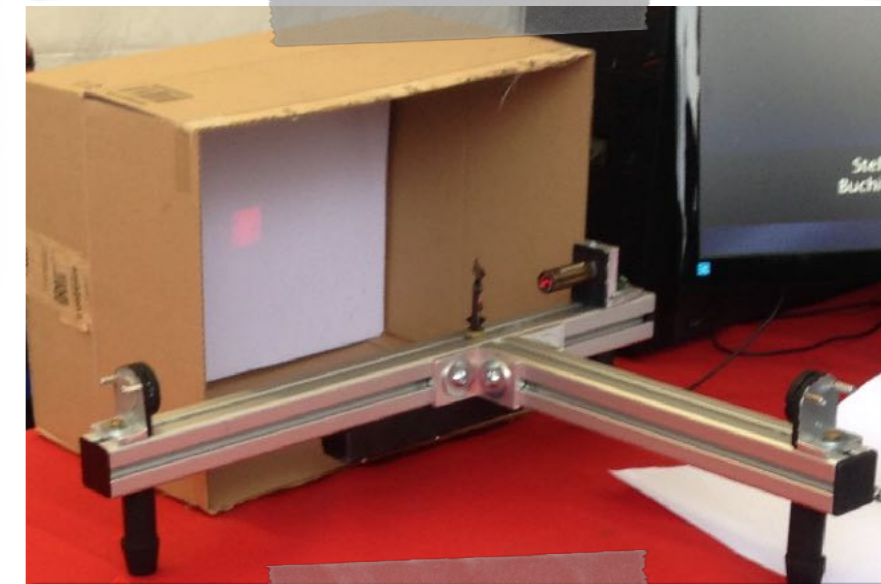
[http://ec.europa.eu/research/mariecurieactions/science-is-wonderful\\_en](http://ec.europa.eu/research/mariecurieactions/science-is-wonderful_en)

A science Communicator and a Researcher presenting the Gravitational Waves science through interactive demos at EU parliament

Massimiliano Trevisan, Science Communicator, Psiquadro social enterprise for science communication

Prof. Helios Vocca, Researcher, University of Perugia & Virgo group Leader

# European Researcher's Night II



# Outreach ► general public



The Turin tower “Mole Antonelliana” was decorated with light projection inspired to Fermi telescope for the 10th anniversary  
News reported both by specialised and public media



# Outreach ► general public



## BANDO INTERNAZIONALE DI ILLUSTRAZIONE

5<sup>a</sup> EDIZIONE 2018

HOME

LA MOLE

EDIZIONE 2018

ED. PRECEDENTI

CONTATTI

Primo premio speciale "Fermi tutti" di **250 euro** assegnato dall'Istituto Nazionale di Fisica Nucleare (INFN) sezione di Torino, nell'ambito delle celebrazioni del decennale del satellite Fermi.



International competition for illustrators, with a special prize in the occasion of the 10th Fermi telescope anniversary

Winner of the contest



Giulia Maidecchi | Cogorno (GE) - Italia | That's a Mole! | Premio Speciale "Fermi tutti" | Edizione 2018

# Science & art

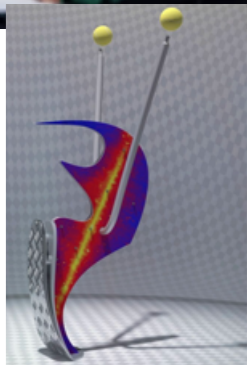
CERN event “Blazing Quasi- Stellar Object” (29 March 2017)

Performance by artist Luca Pozzi

Event web page: <https://indico.cern.ch/event/598262/contributions/2535509/>

Press release: [https://indico.cern.ch/event/598262/contributions/2535509/attachments/1440148/2243368/BQSO\\_press\\_review.pdf](https://indico.cern.ch/event/598262/contributions/2535509/attachments/1440148/2243368/BQSO_press_review.pdf)

Recorded event: <https://cds.cern.ch/record/2258204>



## LUCA POZZI. THE GRANDFATHER PLATFORM

Dal: 2/02/2018 - Al: 30/03/2018

Palazzo Magnani, via Zamboni 20 - Bologna

Tel: +39 051 2962503

MAP

WEBSITE



Artistic exhibit by Luca Pozzi in Bologna

[www.lucapozzi.com/the-grandfather-platform](http://www.lucapozzi.com/the-grandfather-platform)

► in collaboration with ESA and INFN Torino

► wide appeal for the general public

<http://www.arte.rai.it/articoli/gravit%C3%A0-quantistica-storia-dell%E2%80%99arte-e-buchi-neri-un-viaggio-quantistico-con-luca-pozzi/39765/default.aspx>





PALAZZO BLU  
ARTE E CULTURA  
10° ANNIVERSARIO

2008/2018  
IL PERIODO BLU

## PREZIOSE CONOSCENZE

*Alla scoperta dei talenti della città.*



“Valuable knowledge: discovering the talents of the city of Pisa”

March and April 2018: the cultural association “Palazzo Blu: Arte e Cultura” in Pisa, in collaboration with Pisa University and INFN, organized a serie of events for the general public.

Prof. Massimiliano Razzano, Dr. Diego Passuello and Dr. Carlo Bradaschia presented the Virgo experiment at the Cascina EGO site.

### Museum permanent demonstration

Astrophysics and Gravitational Waves experimental setup installer both at Science and Technology Museum (POST) and Physics Department in Perugia.

<http://www.perugiapost.it/>

# Meeting communities 0



**5<sup>th</sup> KAGRA International Workshop**  
**February 14-15, 2019**

**1<sup>st</sup> KAGRA-Virgo-3G Detectors Workshop**  
**February 16, 2019**

**Perugia, Italy**

## **The 1st KAGRA-Virgo-3G Detectors Workshop**

February 2019: the KAGRA experiment realises a bridge between the second generation of GW detectors, like Advanced Virgo and Advanced LIGO, and the third generation of GW observatories, like Einstein Telescope and Cosmic Explorer.

# Meeting communities I

## Workshop on Observatory Synergies for Astroparticle physics and Geoscience

February 2019: Geosciences and Astroparticle Physics share a mutual scientific culture based on common objects of study, methods and approaches.

► explore the possible common grounds and combine the scientific expertise of both fields, in order to promote original interdisciplinary research and education projects.



<https://indico.ego-gw.it/event/13/>



COST ACTION CA17137  
A NETWORK FOR GRAVITATIONAL  
WAVES, GEOPHYSICS AND  
MACHINE LEARNING



## 1st Conference on Machine Learning for Gravitational Waves, Geophysics, Robotics, Control System and CA17137 MC2 meeting

January 2019: Cost Action aiming at creating a broad network of scientists from 4 different areas of expertise: GW physics, Geophysics, Computing Science and Robotics, with a common goal of tackling challenges in data analysis and noise characterization for GW detectors.

# Meeting communities II



GWEOS-2019 Pisa  
Workshop

<https://agenda.infn.it/event/17643/>

Aim of the workshop: put together physicists with competences in gravitational waves, nuclear physics and neutron star physics to create a bridge between these communities and to foster future collaborations.

