



Welcome to the
CODATA-RDA applied workshop on
Extreme sources of data:
ATLAS Open Data

Founded in 1964 by the Nobel Laureate Abdus Salam, the International Centre for Theoretical Physics (ICTP) has been a driving force behind global efforts to advance scientific expertise in the developing world.

ICTP conducts world-class research in frontier areas of science, is dedicated to fostering growth of advanced studies and research in physical and mathematical sciences through high-level scientific programmes especially in support of excellence in the developing world and is committed to science advocacy and international cooperation through science by providing an international forum of scientific contact for scientists from all countries.



ICTP operates under a tripartite agreement between the Italian Government, the International Atomic Energy Agency (IAEA), and the United Nations Educational, Scientific and Cultural Organization (UNESCO). ICTP is a UNESCO Category 1 Institute.

ICTP also has a Scientific Council that comprises distinguished specialists in disciplines relevant to the Centre's activities, among which:
Prof. Luciano Maiani, Prof. Giorgio Parisi, Prof. Lisa Randall



<https://www.ictp.it/>

RESEARCH SECTIONS

HECAP

High Energy, Cosmology and Astroparticle Physics

CMSP

Condensed Matter and Statistical Physics

MATH

Mathematics

ESP

Earth System Physics

STI

Science, Technology and Innovation

QLS

Quantitative Life Sciences

New Research Areas

New Research Areas

NEXT DEADLINES for Programmes & Opportunities



31 Jul 2022 [apply](#)

Joint ICTP-IAEA Advanced School/Workshop on Machine Learning in Citizen Science | (smr 3739)

31 Jul 2022 [apply](#)

Joint ICTP-IAEA Workshop on Radiation Protection in Image Guided Interventional Procedures | (smr 3743)

07 Aug 2022 [apply](#)

School on Information, Noise, and Physics of Life | (smr 3736)

14 Aug 2022 [apply](#)

Strongly Correlated Matter: from Quantum Criticality to Flat Bands | (smr 3732)

15 Aug 2022 [apply](#)

Maker Faire Trieste 2022 | (smr 3770)



GOVERNING MEMBERS



ICTP & UNESCO

ICTP is a flagship of UNESCO's sciences programmes and embodies the ideals of UNESCO in education, science and culture.



ICTP & the IAEA

ICTP is a reliable partner for the IAEA in helping developing countries use nuclear science and technology for peaceful purposes.



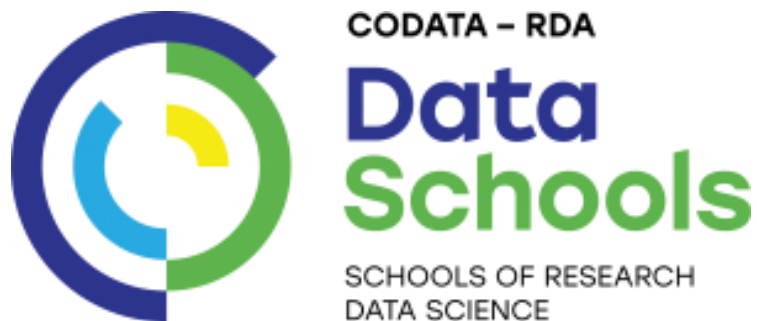
ICTP & Italy

Italy's support of ICTP ensures that scientists in developing countries have unique educational and research opportunities in basic and applied sciences.



The Committee on Data of the International Science Council (CODATA) was established in 1966 as the Committee on Data for Science and Technology, originally part of the International Council of Scientific Unions (ICSU), now part of the International Science Council (ISC).

CODATA exists to promote global collaboration to advance open science and to improve the availability and usability of data for all areas of research.



CODATA-RDA School of Research Data Science, piloted in 2016 in ICTP, has developed a short course, summer school-style curriculum that addresses questions related to Open Science and research data, the use of a range of data platforms and infrastructures, large scale analysis, statistics, visualisation and modelling techniques, as well as software development.

Local organizers:



Clement Onime



Leonid Serkin

Secretariat:



Monica Ancuta



Viktoriya Lvova



Adriana Pinto



Giovanni Guerrieri (ICTP)



Meirin Evans (Sussex, UK)



Michele Pinamonti (INFN)



Mohammed Faraj (ICTP)



Muhammad Alhroob (Oklahoma, USA)

Monday, 25 July 2022

10:00 - 17:45

Extreme Sources of Data Workshop

Location: Adriatico Guest House - Eklund Informatics Lab

10:00 **Welcome and setting up the tools** 1h0'

11:00 **Coffee break** 30'

11:30 **The physics behind ATLAS Open Data** 1h0'

Speaker: Leonid SERKIN (ICTP, Italy)

12:30 **Lunch Break** 1h30'

We will start 14:30 ! 14:00 **Hands-on C++: ATLAS Open Data** 2h0'

Speaker: Leonid SERKIN (ICTP, Italy)

16:00 **Coffee break** 15'

16:15 **Hands-on C++: ATLAS Open Data** 1h30'

Speaker: Leonid SERKIN (ICTP, Italy)

Tuesday, 26 July 2022

09:30 - 17:45

Extreme Sources of Data Workshop

Location: Adriatico Guest House - Eklund Informatics Lab

09:30 **Intro to Python** 1h30'

Speaker: Giovanni GUERRIERI (ICTP, Italy)

11:00 **Coffee break** 30'

11:30 **Numpy and Pandas** 1h0'

Speaker: Giovanni GUERRIERI (ICTP, Italy)

12:30 **Lunch Break** 1h30'

14:00 **Python uproot** 2h0'

Speaker: Meirin Oan EVANS (University of Sussex, UK)

16:00 **Coffee break** 15'

16:15 **Python Matplotlib for HEP** 1h30'

Speaker: Meirin Oan EVANS (University of Sussex, UK)

Wednesday, 27 July 2022

09:30 - 17:45

Extreme Sources of Data Workshop

Location: Adriatico Guest House - Eklund Informatics Lab

09:30 **Intro to ML** 1h30'

Speaker: Meirin Oan EVANS (University of Sussex, UK)

11:00 **Coffee break** 30'

11:30 **Applying ML to ATLAS Open Data** 1h0'

Speaker: Meirin Oan EVANS (University of Sussex, UK)

12:30 **Lunch Break** 1h30'

14:00 **ML on GPU** 2h0'

Speaker: Meirin Oan EVANS (University of Sussex, UK)

Group photo 4pm!

16:00 **Group Photo** 2'

16:02 **Coffee break** 13'

16:15 **Replicating a HEP Deep Learning result** 1h30'

Speaker: Leonid SERKIN (ICTP, Italy)

Social dinner in town

Thursday, 28 July 2022

09:30 - 17:45

Extreme Sources of Data Workshop

Location: Adriatico Guest House - Eklund Informatics Lab

09:30 **Statistics tutorial** 1h30'

Speaker: Michele PINAMONTI (INFN, Italy)

11:00 **Coffee break** 30'

11:30 **Statistics tutorial** 1h0'

Speaker: Michele PINAMONTI (INFN, Italy)

12:30 **Lunch Break** 1h30'

14:00 **ATLAS Open Data with Root DataFrame** 2h0'

Speaker: Imad Mohammed FARAJ (ICTP, Italy)

16:00 **Coffee break** 15'

16:15 **Time to work on group projects** 1h30'

Friday, 29 July 2022

09:30 - 12:30

Extreme Sources of Data Workshop

Location: Adriatico Guest House - Eklund Informatics Lab

09:30 **Presentations of project results by participants** 1h30'

11:00 **Coffee break** 30'

11:30 **Live virtual-visit to ATLAS Control Room** 30' (Adriatico Guest House - Giambiagi Lecture

virtual

Speaker: Muhammad ALHROOB (University of Oklahoma, USA)

12:00 **Summary session and hand-out of certificates** 30' (Adriatico Guest House - Giambiagi L



Our workshop will be held in the **Eklund Informatics Lab**

Cafeteria opening hours:

Adriatico Bar: Monday to Friday 8.00 - 11.00

Adriatico Cafeteria:

Lunch: Monday to Friday 12.00 - 13.30

Dinner: CLOSED.

Leonardo Building Cafeteria:

Lunch: Monday to Friday 12.00 - 13.45

Dinner: Every day of the week 19.30 - 20.30



From Grignano (Adriatico)

dal lunedì al sabato

partenze da Grignano (riva Massimiliano e Carlotta)

5	25 ^(E)	37 ^(E)	40		
6	10	17 ^(E)	30	50	
7	10 ^(PV)	23 ^(E)	30	50	
8	05	10 ^(E)	20 ^(PV)	35	50 ^(PV)
9	05	20 ^(PV)	35	50	
10	05 ^(PV)	20	35	50	
11	05	20 ^(PV)	35	50	
12	05 ^(PV)	20	35 ^(PV)	50	
13	05	20 ^(PV)	35	50 ^(PV)	
14	05	20	35 ^(PV)	50	
15	05	20	35	50 ^(PV)	
16	05	20	35 ^(PV)	50	
17	05 ^(PV)	20	20 ^(H)	35	50 ^(PV)
18	00 ^(H)	05	20 ^(PV)	35	40 ^(H) 50
19	05 ^(PV)	20	20 ^(H)	35	50
20	05	20	35	50	
21	05 ^(F)	30 ^(G)			
22	00 ^(F)				
23	30 ^(F)				

From the city

dal lunedì al sabato

partenze da piazzale Gioberti

5	17 ^(A)	32	50		
6	10	30	50		
7	05	20 ^(PV)	35	50	
8	05 ^(PV)	20	35 ^(PV)	50	
9	05	20 ^(PV)	35	50 ^(PV)	
10	05	20	35 ^(PV)	50	
11	05	20	35	50 ^(PV)	
12	05	20	35 ^(PV)	50	
13	05 ^(PV)	20	35	50 ^(PV)	
14	05	20 ^(PV)	35	50	
15	05 ^(PV)	20	35	50	
16	05	20 ^(PV)	35	50	
17	00 ^(I)	05 ^(PV)	20	35 ^(PV)	40 ^(I) 50
18	05	20 ^(PV)	20 ^(I)	35	50 ^(PV)
19	00 ^(I)	05	20	35 ^(PV)	50
20	05	20	25 ^(B)	40	50 ^(B)
21	10 ^(B)	25 ^(B)	45 ^(C)		
23	10 ^(A)				

linea C

percorso 1 | PIAZZA GOLDONI

dal lunedì al sabato	CORSE		
	1	2	3
piazza Goldoni		0:00	
Barcola		0:10	
Grignano		0:20	



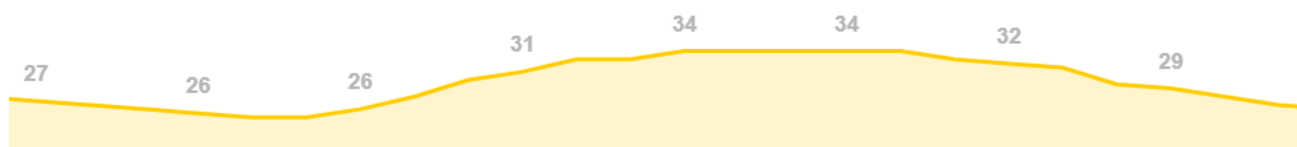
35 °C | °F

Precipitation: 0%
Humidity: 50%
Wind: 8 km/h

Trieste, Province of Trieste

Monday
Sunny

Temperature | Precipitation | Wind



02:00	05:00	08:00	11:00	14:00	17:00	20:00	23:00
Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
37° 24°	35° 24°	30° 23°	31° 22°	33° 22°	32° 22°	29° 21°	31° 21°

