

Welcome to the 4th edition of the Data Science on Particle and Astroparticle Physics School



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Data Science ...**NEW** !



Previous editions



First School for Particle and Astroparticle Physics in Albania

<https://indico.cern.ch/event/688013/>

23–26 Jan 2018
Faculty of Natural Sciences
Europe/Tirane timezone

Enter your search term

Particle and Astroparticle Physics School in Tirana 2019

<https://indico.cern.ch/event/781148/>



4–8 Feb 2019
Faculty of Natural Sciences
Europe/Tirane timezone



Particle and Astroparticle Physics School in Tirana 2020

<https://indico.cern.ch/event/860079/>

27–31 Jan 2020
Faculty of Natural Sciences
Europe/Tirane timezone

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Why Schools ?

- We are active in very large international world-wide collaborations
 - LHC experiments (CMS, Alice) , Fermi-lat
 - Those require huge resources, money, manpower
 - They will last for 30 years
 - and collect enormous quantity of data
- Users are located worldwide
 - larger distances and large time differences
 - need to access data and run tools from remote
 - Highly distributed environment for Computing and physics analyses
- How to quickly come up to a level to contribute to physics
 - the computing environment is complex
 - the tools are not-trivial
 - there is lack of information/documentation
 - users come from different background

Need organized training → that is why we had the idea to organize schools



CMS Data Analysis School



- ▶ The very first kind of CMS school - CMSDAS
- ▶ Focus - Physics Analysis

- ▶ 5 day school
 - ▶ 10% lectures
 - ▶ 90% hands on



- ▶ Analysis of collision data
- ▶ >1000 students trained
- ▶ 1st school 2010 at Fermilab LPC
- ▶ 16 CMSDAS held in 7 years
 - ▶ Fermilab, CERN, Pisa, Bari, DESY, Taipei, Seoul, Kolkata
- ▶ Genesis: JTERM physics school
 - ▶ at FNAL LPC (2006-2009) 90%
 - ▶ lectures (prior to data taking)

Later the idea of CMS Schools was expanded

CMS Upgrade School (2014)



Focus - Detector Hardware



CMS Object School (2017)

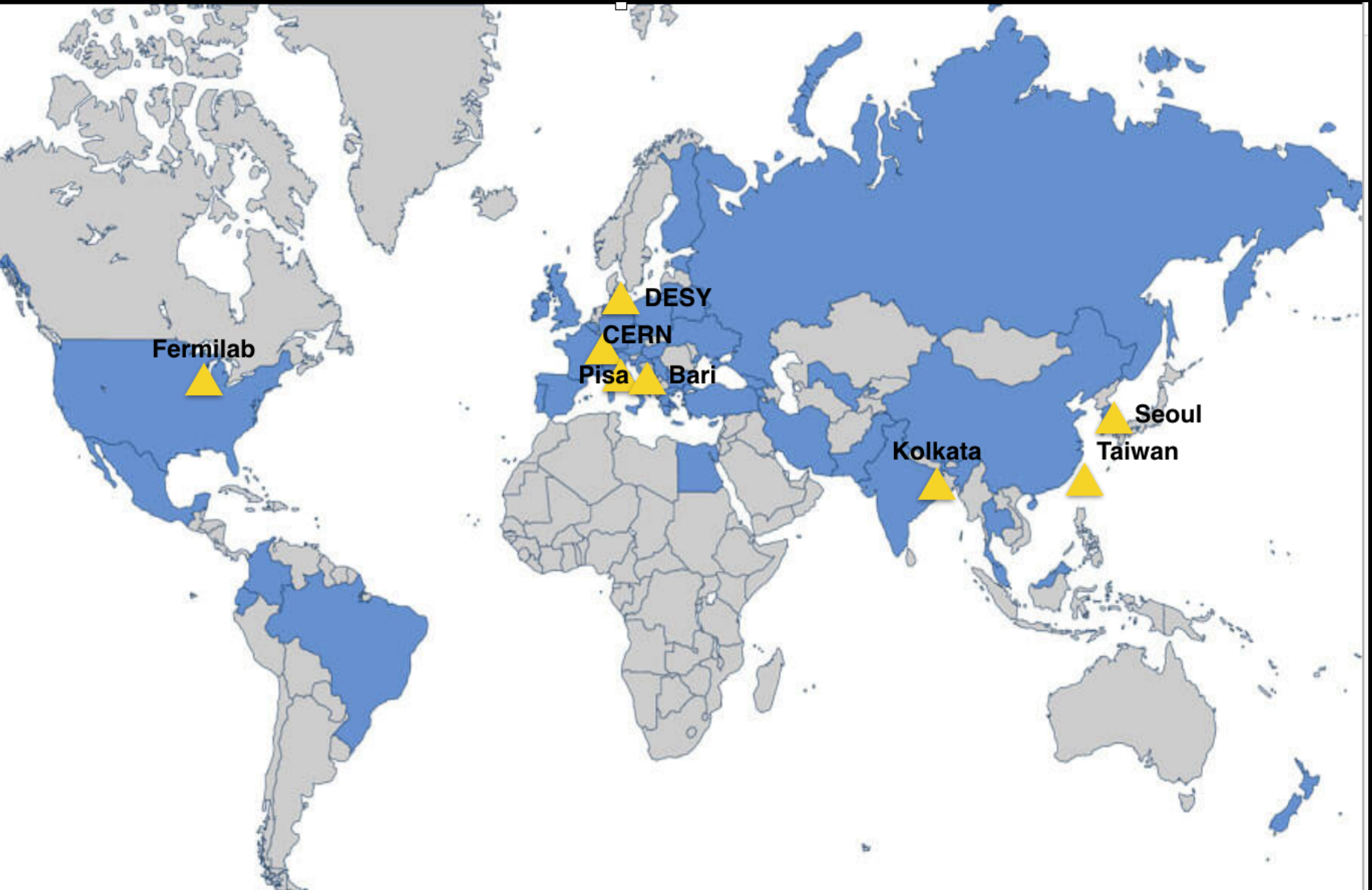


Focus - Physics Objects





- ▶ CMS Schools locations (since 2010)
- ▶ The blue countries are on CMS



A school model

- A high-intensity, engaging **3+1 day camp**, that will charge you up, change your mindset, and give you a reason to engage in cutting edge basic research and continue with it happily ever after!
- Few important topics introduced by lectures
- Learning via interactive tutorials
- Dissemination session

Collaborative & Active Learning



Enjoy yourself at the school