

# PROGRAM AT A GLANCE – WEEK 1

13.05

Opening day

Opening Session  
Presentation of HUST

Presentations of the Lab  
sessions prepared for  
this School

14.05

A vision of the main frontier  
research fields

New trends in Astrophysics,  
Astronomy and Cosmology:  
From Large terrestrial telescope  
to spatial new instruments

Next generation Neutrino  
experiments & Future HEP  
Machines: What New Physics  
will they Reveal?

15.05

Intelligence on instruments:  
The high technology side

New trends on Si  
technology

Cold Detectors: from  
Astrophysics to Q-  
computing

16.05

Intelligence on instruments:  
The Particle Physics case

Highly Pixelated Detectors  
1) New Fast Timing  
Detectors

2) High Granularity Si  
Calorimetry

17.05

Intelligence on instruments:  
The Astrophysics case

K A G R A : 2<sup>nd</sup> G W  
generation & 1<sup>st</sup> G W  
Underground experiment

Review on D A R K  
M A T T E R searches

**KEYNOTE LECTURE:** Scientific & technological challenges of solar system exploration over the next 30 years

**KEYNOTE LECTURE: THE NEW WAYS TO EXPLORE THE BRAIN FUNCTIONING**

**KEYNOTE LECTURE; IMPACT OF HIGH TECH SEMICONDUCTOR INNOVATIONS ON TRACKING CONCEPTS**

**KEYNOTE LECTURE; DUNE, JUNO, SUPER/HYPERK; THE LAST WORD ON NEUTRINOS?**

**KEYNOTE LECTURE: PANEL TOWARDS LARGE SCALE INSTRUMENTS/LABS IN SPACE**

18.05

The brain exploration and  
related new technologies

The Medical Motivations

Big Data and personalized  
Medicine

19.05

Break:

Organized Wuhan  
sightseeing Tours

Sport, free activities

**KEYNOTE LECTURE; HIGH FIELD MAGNETS FOR MEDICAL RESEARCH & FUNDAMENTAL RESEARCH**

# PROGRAM AT A GLANCE – WEEK 2

20.05

Data transmission: High Rate & New trends

High rate/High speed data transmission challenges & solutions: Photonics applied to Telecom

Quantum Computing: Alternative Approaches

21.05

Introduction to artificial intelligence

Introduction to Artificial Intelligence & the Internet of Things

Artificial Intelligence: the Hardware side

22.05

Big data-day

Fundamental Research: the Big Data Challenges

GPGPU computing for real time event filtering (HEP example case)

23.05

New directions in HPC:

Introduction to Quantum computing

Introduction to Machine Learning & Deep Learning

24.05

New Directions in HPC

New FPGA techno by INTEL

Quantum Photonics

Programmable Photonics

**KEYNOTE LECTURE:**  
**BIOPHOTONICS**

**SPORTS COMPETITION**

**SCHOOL BANQUET**

**KEYNOTE LECTURE; PANEL**  
**THE NEXT GENERATION OF**  
**PARTICLE ACCELERATORS**

**KEYNOTE LECTURE: XXITH**  
**CENTURY: THE CENTURY OF WORLD**  
**SUSTAINABLE ENERGY**

25.05

Posters session

Fundamental Science & Technology: colloquium

School Awards  
Farewell Party