

## **Session Program**

**12-26 May 2019**



## **5th Summer School on INtelligent signal processing for FrontIer Research and Industry**

### ***PLENARY MORNING SESSION***

Huazhong University of Science and Technology in Wuhan, China

## Tuesday 14 May

08:00

### PLENARY MORNING SESSION: A VISION OF THE MAIN FRONTIER RESEARCH FIELDS COVERED BY THIS SCHOOL

**Session** | **Location:** Huazhong University of Science and Technology in Wuhan, China | **Convener:** Prof. Philip Patrick ALLPORT

08:00–09:50

#### VISION ON THE NEW TRENDS ON ASTROPHYSICS AND COSMOLOGY: FROM LARGE GROUND BASE SURVEYS TO SPACE MISSIONS

**Speaker**

Prof. Zuhui FAN

09:00–11:00

#### VISIT during the INFIERI School: ZAIGA project presentation at the WUHAN University

09:50–10:10

#### Coffee/Tea Break

10:10–12:00

#### A VISION ON THE MAIN DIRECTIONS IN HIGH ENERGY PHYSICS IN THE NEXT DECADES

**Speaker**

Prof. Aurore SAVOY NAVARRO

12:00

## Wednesday 15 May

08:00

### PLENARY MORNING SESSION: INTELLIGENCE ON THE INSTRUMENTS: THE TECHNOLOGY SIDE

**Session** | **Location:** Huazhong University of Science and Technology in Wuhan, China | **Convener:**  
Dr Francesca CAVALLARI

08:00–09:50

#### NEW DEVELOPMENTS ON SILICON TECHNOLOGY

**Speaker**

Prof. Gianluigi CASSE

09:50–10:10

#### Coffee/Tea Break

09:50–12:10

#### Visit of Dr Yann Moreau from the General Consulate of France at Wuhan

10:10–12:00

#### COLD DETECTORS: FROM ASTROPHYSICS TO QUANTUM COMPUTING

**Speaker**

Dr Jean-Luc SAUVAGEOT

16:00

## Thursday 16 May

08:00

### PLENARY MORNING SESSION: INTELLIGENCE ON THE INSTRUMENTS: THE PARTICLE PHYSICS CASE

**Session** | **Location:** Huazhong University of Science and Technology in Wuhan, China | **Convener:**  
Prof. Gianluigi CASSE

08:00–09:50

#### NEW HIGH GRANULARITY CALORIMETERS for HIGH ENERGY PHYSICS

**Speaker**

Dr David BARNEY

09:50–10:10

#### Coffee/Tea Break

10:10–12:00

#### HIGH PERFORMANCE TIMING DETECTORS FOR HIGH ENERGY PHYSICS EXPERIMENTS & NEW DEVELOPMENTS FOR High LUMINOSITY LHC

**Speaker**

Dr Francesca CAVALLARI

12:00

## Friday 17 May

08:00

### PLENARY MORNING SESSION: INTELLIGENCE ON THE INSTRUMENTS: THE ASTROPHYSICS CASE; FROM UNDERGROUND TO TERRESTRIAL TO SPACE EXPERIMENTS

**Session** | **Location:** Huazhong University of Science and Technology in Wuhan, China | **Convener:**  
Dr Robert PATTI

08:00–09:50

#### KAGRA: 2ND GENERATION OF GRAVITATIONAL WAVE (GW) EXPERIMENT & FIRST UNDERGROUND GW EXPERIMENT

**Speaker**

Prof. Osamu MIYAKAWA

09:50–10:10

**Coffee/Tea Break**

10:10–12:00

**DARK MATTER SEARCHES: AN OVERVIEW****Speaker**

Prof. Charling TAO

12:00

Saturday 18 May

08:00

PLENARY MORNING SESSION: THE BRAIN EXPLORATION AND RELATED NEW TECHNOLOGIES

Session | Location: Huazhong University of Science and Technology in Wuhan, China | Convener: Prof. Nicola D'ASCENZO

08:00–09:50 DIGITAL PET 2.0

Speaker  
Prof. Qingguo XIE

09:50–10:10 Coffee/Tea Break

10:10–12:00 INTRODUCTION TO QUANTUM COMPUTING

Speaker  
Prof. Man-Hong YUNG

12:00

## Monday 20 May

08:00

### PLENARY MORNING SESSION: DATA TRANSMISSION: HIGH RATE, HIGH SPEED AND NEW TRENDS IN DATA COMMUNICATION

**Session** | **Location:** Huazhong University of Science and Technology in Wuhan, China | **Convener:** Prof. Yoshinobu UNNO

08:00–09:50

#### QUANTUM COMPUTING: ALTERNATIVE APPROACHES

**Speaker**

Dr Robert PATTI

09:50–10:10

#### Coffee/Tea Break

10:10–12:00

#### HIGH RATE/HIGH SPEED DATA TRANSMISSION CHALLENGES & SOLUTIONS: PHOTONICS APPLIED TO TELECOM

**Speaker**

Prof. Ming TANG

12:00

## Tuesday 21 May

08:00

### PLENARY MORNING SESSION: INTRODUCTION TO ARTIFICIAL INTELLIGENCE

**Session** | **Location:** Huazhong University of Science and Technology in Wuhan, China | **Convener:**  
Prof. Jesus MARCO DE LUCAS

08:00–09:50

#### THE HARDWARE SIDE OF ARTIFICIAL INTELLIGENCE: PIXEL-EMBEDDED SIGNAL PROCESSING FOR THE NEXT GENERATION OF RADIATION DETECTORS AT THE LHC AND FREE ELECTRON LASER MACHINES

**Speaker**

Prof. Lodovico RATTI

09:50–10:10

**Coffee/Tea Break**

10:10–12:00

**PROGRAMMING FOR BIG DATA PROCESSING****Speaker**

Prof. Hai JIN

12:00



## Wednesday 22 May

08:00

### PLENARY MORNING SESSION: BIG DATA DAY

**Session** | **Location:** Huazhong University of Science and Technology in Wuhan, China | **Convener:**  
Dr Rogerio IOPE

08:00–09:50

#### BIG DATA & FUNDAMENTAL RESEARCH: CHALLENGES & PERSPECTIVES

**Speaker**

Prof. Jesus MARCO DE LUCAS

09:50–10:10

#### Coffee/Tea Break

10:10–12:00

#### GPGPU COMPUTING FOR REAL TIME EVENT FILTERING (WITH THE HEP AS AN EXAMPLE CASE)

**Speaker**

Dr Dorothea VOM BRUCH

12:00

## Thursday 23 May

08:00

### PLENARY MORNING SESSION: NEW DIRECTIONS in HIGH PERFORMANCE COMPUTING

**Session** | **Location:** Huazhong University of Science and Technology in Wuhan, China | **Convener:**  
Dr Dorothea VOM BRUCH

08:00–09:50

#### MACHINE LEARNING AND DEEP LEARNING

**Speaker**

Dr Lara LLORET IGLESIAS

09:50–10:10

#### Coffee/Tea Break

10:10–12:00

#### THE BRAIN & THE NEW TECHNOLOGIES: THE MEDICAL POINT OF VIEW

**Speaker**

Prof. Min ZHANG

12:00

## Friday 24 May

08:30

### PLENARY MORNING SESSION: NEW DIRECTIONS in HIGH PERFORMANCE COMPUTING

**Session** | **Location:** Huazhong University of Science and Technology in Wuhan, China | **Convener:**  
Dr Lara LLORET IGLESIAS

08:30–10:00

#### NEW INTEL FPGA TECHNOLOGY

**Speaker**

Mr Dylan WANG

10:00–10:20

#### Coffee/Tea Break

10:20–12:00

#### COMPUTATIONAL SPECTRAL VIDEO IMAGING

**Speaker**

Prof. Xun CAO

12:00–13:00

#### NEUROMORPHIC COMPUTING WITH SPINTRONIC NANODEVICES

**Speaker**

Dr Danijela MARKOVIC

13:00