1st Summer School on INtelligent Signal Processing for FrontIEr Research and Industry

Report of Contributions

Introductory lecture to the school: ···

Contribution ID: 0

Type: not specified

Introductory lecture to the school: Detectors and Electronics for 21st century Instrumentation: What have we learnt? Where should we focus?

Wednesday, 10 July 2013 09:00 (2 hours)

Presenter: Prof. ALLPORT, Philip Patrick (University of Liverpool (GB))

Advanced CMOS Technologies: c ···

Contribution ID: 1

Type: not specified

Advanced CMOS Technologies: current trends and future prospects

Wednesday, 10 July 2013 11:30 (1h 30m)

Presenter: Dr MARCHIORO, Alessandro (CERN)

The 3D technology or towards full …

Contribution ID: 2

Type: not specified

The 3D technology or towards full integration

Wednesday, 10 July 2013 16:30 (1h 30m)

Presenter: Dr PATTI, Robert (Tezzaron, SA, USA)

Intelligent PMTs versus SiPMs

Contribution ID: 3

Type: not specified

Intelligent PMTs versus SiPMs

Thursday, 11 July 2013 09:00 (2 hours)

Presenter: Dr PUILL, Veronique (Laboratoire de l'Accelerateur Lineaire, Orsay, France)

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SiPM used as PMT devices for io ...

Contribution ID: 4

Type: not specified

SiPM used as PMT devices for ionized particle detection and new trends on related pixel technology, signal processing issues and applications

Thursday, 11 July 2013 11:30 (1h 30m)

Presenter: Prof. SAVELIEV, Valeri (Institute of Applied Mathematics, Russian Academy of Science)

Philips Digital Photon Counter, A …

Contribution ID: 5

Type: not specified

Philips Digital Photon Counter, Applications to High Energy, Astrophysics and Medical Physics

Thursday, 11 July 2013 16:30 (1h 30m)

Presenter: Dr HAEMISH, York (Philips Digital Photon Counting, Philips Group of Innovation)

Introduction to the use of micros ...

Contribution ID: 6

Type: not specified

Introduction to the use of microstrip and pixel based devices & corresponding main challenges to be confronted by their associated Front-End Electronics

Friday, 12 July 2013 09:00 (2 hours)

Presenter: Dr DA VIA', Cinzia (Manchester University, UK)

Micro-strip based detection syste ...

Contribution ID: 7

Type: not specified

Micro-strip based detection systems: advances and new technological developments

Friday, 12 July 2013 11:30 (1h 30m)

Presenter: Prof. UNNO, Yoshinobu (High Energy Accelerator Research Organization (JP))

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Intelligent Signal Front-End Proc

Contribution ID: 8

Type: not specified

Intelligent Signal Front-End Processing for micro-strip based instruments including triggering capability

Friday, 12 July 2013 16:30 (1h 30m)

Presenter: Prof. RYD, Anders (Cornell University (US))

Intelligent Front-End for pixel- ···

Contribution ID: 9

Type: not specified

Intelligent Front-End for pixel-based instruments: Front-End and novel ideas

Saturday, 13 July 2013 09:00 (2 hours)

Presenter: Dr RATTI, Lodovico (University of Pavia)

Intelligent Front-End for pixel- ···

Contribution ID: 10

Type: not specified

Intelligent Front-End for pixel-based instruments: digital processing of the pixel matrix part

Saturday, 13 July 2013 11:30 (1h 30m)

Presenter: Dr GABRIELLI, Alessandro (Universita di Bologna e INFN (IT))

Semiconductor detector technolo \cdots

Contribution ID: 11

Type: not specified

Semiconductor detector technology for medical and scientific imaging: quantum processing and Medipix developments in particular

Saturday, 13 July 2013 16:30 (1h 30m)

Presenter: Dr HEIJNE, Erik (CERN and NIKHEF)

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Challenges and opportunities of \cdots

Contribution ID: 12

Type: not specified

Challenges and opportunities of massive parallelism

Sunday, 14 July 2013 09:45 (45 minutes)

Presenter: Dr SALVINI, Stef (University of Oxford)

The challenges of real-time proce \cdots

Contribution ID: 13

Type: not specified

The challenges of real-time processing on detector in Astro & HEP worlds in the 21st century

Sunday, 14 July 2013 11:00 (1 hour)

Presenters: Prof. NEWBOLD, Dave (Bristol University & RAL); Dr ZARB-ADAMI, Kris (Oxford)

Optical wireless for data transmi ...

Contribution ID: 14

Type: not specified

Optical wireless for data transmission

Monday, 15 July 2013 09:00 (1h 30m)

Presenter: Prof. CIARAMELLA, Ernesto (Scuola Superiore Sant'Anna, IT)

The interconnected world: needs ····

Contribution ID: 15

Type: not specified

The interconnected world: needs in Astrophysics

Monday, 15 July 2013 11:00 (30 minutes)

Presenter: Prof. JONES, Michael (Oxford)

New trends in the High Tech wo

Contribution ID: 16

Type: not specified

New trends in the High Tech world from INTEL

Monday, 15 July 2013 16:30 (1h 30m)

Presenter: Dr BORGES, Leonardo (INTEL (Houston, USA))

Test bench: specificities and evol \cdots

Contribution ID: 17

Type: not specified

Test bench: specificities and evolution for the HEP and the Astrophysics Fields

Tuesday, 16 July 2013 08:45 (1h 30m)

Presenters: Dr GREGOR, Ingrid (Deutsches Elektronen-Synchrotron (DE)); Dr WHITE, Richard (University of Leeds)

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Test automation of 3D integrated \cdots

Contribution ID: 18

Type: not specified

Test automation of 3D integrated system

Tuesday, 16 July 2013 11:30 (1h 30m)

Presenter: Dr PATERAS, Stephen (Mentor Graphics' Silicon Test Solution (USA))

Contribution ID: 19

Type: not specified

OUTREACH EVENT & PUBLIC LECTURE: "Future trends in Medical Imaging"

Wednesday, 10 July 2013 20:00 (1h 30m)

Prof. D. Townsend, Director, A*STAR-NUS Clinical Imaging Research Centre, SG.

The past few decades have witnessed tremendous progress in the development of instrumentation and techniques for medical imaging. From the radiographs and scintigraphy of the 1960s to the modern Computed Tomography (CT), Magnetic Resonance Imaging (MRI), Single Photon Emission Computed Tomography (SPECT) and Positron Emission Tomography (PET) devices of today, greater and greater detail of the human body has been revealed non-invasively. Imaging is now widely used as an essential adjunct to clinical assessment for diagnosis and staging of human disease, and increasingly in the design of appropriate therapies and then monitoring response to these treatments. However, despite this tremendous progress in the performance of imaging instrumentation, the challenge remains one of early detection and accurate disease staging when a cure is still possible. This presentation will review recent progress in instrumentation for medical imaging and, in particular, the development of new hybrid designs that acquire dual modalities within a single device. Some speculation as to future trends in high performance medical imaging instrumentation will be offered.

Presenter: Prof. TOWNSEND, David (Clinical Imaging Research Center, Singapore)

Contribution ID: 22

Type: not specified

OUTREACH EVENT & PUBLIC LECTURE: Astronomy in 2033 : What we will (and won't) know about the Universe

Monday, 15 July 2013 20:00 (1h 30m)

Astronomy is undergoing a quiet revolution - new telescopes and new techniques being built and developed right now will change our view of the Universe for good. In this lecture, Sky at Night presenter Chris Lintott will peer into the future and predict what we will - and won't - know in twenty years' time.

Presenter: Dr LINTOTT, Chris (University of Oxford)

Molecular Imaging Modalities & \cdots

Contribution ID: 23

Type: not specified

Molecular Imaging Modalities & Technologies: Lecture 1

Sunday, 14 July 2013 12:00 (1 hour)

Presenter: Prof. LEVIN, Craig (Stanford University School of Medicine (USA))

Molecular Imaging Modalities & \cdots

Contribution ID: 24

Type: not specified

Molecular Imaging Modalities & Technologies: Lecture 2

Monday, 15 July 2013 12:00 (1 hour)

Presenter: Prof. LEVIN, Craig (Stanford University School of Medicine (USA))

Molecular Imaging Modalities & · · ·

Contribution ID: 25

Type: not specified

Molecular Imaging Modalities & Technologies: Lecture3

Tuesday, 16 July 2013 10:15 (1 hour)

Presenter: Prof. LEVIN, Craig (Stanford University School of Medicine (USA))

Contribution ID: 26

Type: not specified

OUTREACH EVENT & PUBLIC LECTURE: The after-Higgs discovery: vision on the Particle Physics strategy

Thursday, 11 July 2013 20:00 (1h 30m)

Only a year has passed since the discovery of a new type of particle, the 'Higgs Boson', at the CERN Large Hadron Collider (LHC), the world's highest-energy subatomic particle collider. The new boson weighs in with an impressive mass of about 125 GeV, and it is the last piece in the Standard Model jigsaw-puzzle of the elementary building blocks of matter and their interactions via forces of nature. However, the Higgs Boson discovery is a gateway to possibly even more exciting new physics processes that have been the subject of intense theoretical speculation. Is the new particle exactly the Higgs Boson of the Standard Model, or could it be the herald of radical theories such as Supersymmetry, which predict a shadow-world of new particles that mirrors our everyday atomic world. Only super-precise measurements of the couplings of the Higgs Boson to fermions and vector bosons will allow us to discriminate between the Standard Model and theories such as Supersymmetry. We will describe the intense particle physics programme that is taking shape to address these questions in the 'Higgs era'. From 2015 LHC will run again at twice its starting energy and may we hope it will yield further spectacular discoveries. Meanwhile designs are converging for a high-energy electron-positron collider to serve as a 'Higgs Factory'. And a new generation of experiments to study the ghostly neutrino is being planned.

Presenters: Prof. ROLANDI, Gigi (CERN & Scuola Normale Superiore Pisa); Prof. BURROWS, Philip (Oxford University)

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RACE: Mens sana in corpore sano

Contribution ID: 27

Type: not specified

RACE: Mens sana in corpore sano

Friday, 12 July 2013 18:30 (1 hour)

Presenter: ALL RUNNERS IN THE INFIERI 2013 SCHOOL DID IT, SEE THE DETAILS IN THE ATTACHED "LECTURE"

SAFETY BRIEFING

Contribution ID: 28

Type: not specified

SAFETY BRIEFING

Wednesday, 10 July 2013 14:00 (15 minutes)

All students will be invited, at 2pm, right after lunch to attend this safety briefing as introduction to the computational and Lab classes.

WELCOME on behalf of the Astr ...

Contribution ID: 29

Type: not specified

WELCOME on behalf of the Astrophysics Department

Wednesday, 10 July 2013 08:50 (10 minutes)

Presenter: Prof. ROCHE, Patrick

Real-time data signal detection for \cdots

Contribution ID: 30

Type: not specified

Real-time data signal detection for pulsars and radio transients using GPUs

Monday, 15 July 2013 11:30 (30 minutes)

Presenter: Dr ARMOUR, Wes (University of Oxford)

Technologies for the Cerenkov A $\,\cdots\,$

Contribution ID: 31

Type: not specified

Technologies for the Cerenkov Array (CTA) experiment

Thursday, 11 July 2013 14:30 (1 hour)

Presenter:Prof. HINTON, Jim (University of Leicester (UK))Session Classification:Parallel Session

Applications of the SiPMs techno $\,\cdots\,$

Contribution ID: 32

Type: not specified

Applications of the SiPMs technology

Thursday, 11 July 2013 15:30 (30 minutes)

Presenter: Prof. CACCIA, Massimo (University of Insubria (IT)) **Session Classification:** Parallel Session

Instrumentation of a Level-1 Trac ...

Contribution ID: 33

Type: not specified

Instrumentation of a Level-1 Track Trigger in the ATLAS detector for the High Luminosity LHC

Tuesday, 16 July 2013 14:10 (10 minutes)

Summary

Presenter: Dr PASTORE, Francesca (Royal Holloway, University of London)

poster 2

Contribution ID: 34

Type: not specified

poster 2

Presenter: Mr A, a (aaaa)

Poster 2

Contribution ID: 35

Type: not specified

Poster 2

Presenter: Dr PRESENTER 2, Presenter 2 (Presenter Dep)

Poster 3

Contribution ID: 36

Type: not specified

Poster 3

Presenter: Dr PRESENTER 3, presenter 3 (Pres 3 dep)

Developing Homodyne Interfero

Contribution ID: 37

Type: not specified

Developing Homodyne Interferometers for Space Applications

Tuesday, 16 July 2013 14:00 (10 minutes)

Summary

Presenter: Ms BRADSHAW, Miranda (University of Birmingham)

The School Banquet at EXETER C $\, \cdots \,$

Contribution ID: 38

Type: not specified

The School Banquet at EXETER COLLEGE

Saturday, 13 July 2013 19:30 (1h 30m)

The School banquet was held at the Exeter College and photos are posted here

TORCH: a Novel Cherenkov Det \cdots

Contribution ID: 39

Type: not specified

TORCH: a Novel Cherenkov Detector for LHCb

Tuesday, 16 July 2013 14:20 (10 minutes)

Summary

Presenter: VAN DIJK, Maarten (CERN)

FPGA-Based L1 Pixel Trigger

Contribution ID: 40

Type: not specified

FPGA-Based L1 Pixel Trigger

Tuesday, 16 July 2013 14:30 (10 minutes)

Presenter: SANTINI, Tales R.S. (USP-Sao Paulo, Brazil)

Development of Compton Camera ···

Contribution ID: 41

Type: not specified

Development of Compton Camera Prototype for Hadrontherapy Monitoring and Medical Imaging

Tuesday, 16 July 2013 14:40 (10 minutes)

Presenter: LEY, Jean Louis (IPNL-CNRS, Lyon, France) **Session Classification:** Poster session

CMS Binary Chip 2: Tracker read ...

Contribution ID: 42

Type: not specified

CMS Binary Chip 2: Tracker readout with trigger primitives for the HL-LHC

Tuesday, 16 July 2013 14:50 (20 minutes)

Presenter: BRAGA, Davide (FERMILAB)

Development of High Rate Proton ···

Contribution ID: 43

Type: not specified

Development of High Rate Proton Range Radiography for Quality Insurance in Hadrontherapy

Tuesday, 16 July 2013 15:00 (10 minutes)

Summary

Presenter: KIEFFER, Robert (University of London (GB))

Simulations of the SST-GATE Op $\,\cdots\,$

Contribution ID: 44

Type: not specified

Simulations of the SST-GATE Optical performance

Tuesday, 16 July 2013 15:10 (10 minutes)

Summary

Presenter: RULTEN, Cameron (LUTH, Observatoire de Paris, France)