

Session Program

25-29 May 2026

**25th IEEE Real Time Conference - La Biodola,
Elba, Italy**

Mini Orals

La Biodola - Isola d'Elba (Italy)

Monday 25 May

11:30

Mini Orals

Session | **Location:** Hotel Hermitage, Maria Luisa Room

11:30-11:32

12 Modular Hardware, Firmware, and Control-System Integration: Lessons from Commissioning the Fast Beam Interlock System at ESS

Speaker

Dr Stefano Pavinato

11:32-11:37

16 Towards Virtualized 100+ Gbps Data Acquisition Software Systems

Speaker

Dr Jalal Mostafa

11:37-11:39

6 Performance evaluation of ITER Synchronous Data Network using Time Sensitive Network

Speaker

David Andrino-Izquierdo

11:39-11:41

22 FPGA-Based Front-End Electronics for AC-LGAD Detector

Speaker

Ms Liyan Jin

11:41-11:43

32 A Reliable Data Processing Board for the front-end electronics of the Hyper-Kamiokande Experiment

Speaker

Alejandro Gómez Gambín

11:43-11:45

38 Readout Electronics System for the CsI(Tl) Calorimeter of the VLAST-P Payload

Speaker

Qian Chen

11:45-11:47

39 Long-Time Coherent Integration for High Precision Weak Signal LiDAR on Lunar Rover

Speaker

Wenhao Duan

11:47-11:49

40 A Real-Time Feed-Forward System for Heralded Quantum Entanglement

Speaker

Zhizhen Qin

11:49-11:51

43 Tapped Delay Lines Time-to-digital converter design and performance in Versal architecture

Speaker

Julien Rossignol

11:51-11:53

55 Progress in Readout Electronics for Scintillator-Based Multi-Neutron Detector Array**Speaker**

Chengjun Zhang

11:53-11:55

105 A Timing-Oriented Pixel Detector ASIC With Delay-Chain-Based Outputs for Three-Dimensional Particle Track Reconstruction**Speaker**

chunlai Dong

11:55-11:57

108 Benchmarking SRO Performance of CAEN Digitizers**Speaker**

Dr Giovanni Cerretani

11:57-11:59

132 Millimeter-Wave-Based Wireless Transmission System for CEPC Detector**Speaker**

Dr Jun Hu

11:59-12:01

137 Precision analysis and development of timing measurement ASICs for strip LGAD readout**Speakers**

Chuanye Wang, Xiaoting Li

12:01-12:03

140 Development of the SAMIDARE Board: A New Acquisition System for TPCs**Speaker**

Claudio Santonastaso

12:03-12:05

57 Extension of a wired time-synchronization protocol for sub-nanosecond accuracy to multiple FPGA families**Speaker**

Mr Eitaro Hamada

12:05-12:07

142 A High-precision Frequency-adaptive Clock Synchronization System**Speaker**

Jiajun Qin

12:07-12:09

188 EJFAT - ESnet / Jefferson Lab FPGA Accelerated Transport. Design Improvements and User Experiences.**Speaker**

Yatish Kumar

12:30

Tuesday 26 May

10:40

Mini Orals

Session | **Location:** Hotel Hermitage, Maria Luisa Room

10:40–10:42

21 MicroTCA-based low latency data streaming and processing architecture using UDP offload and Time Sensitive Networking

Speaker

ALEJANDRO PIÑAS-HIGUERUELA

10:42–10:44

35 Development of the IDROGEN White Rabbit system for SuperKEKB and future projects at KEK

Speaker

Hiroshi Kaji

10:44–10:46

46 CODA SRO DAQ with Real-Time Data Processing Components

Speaker

David Abbott

10:46–10:48

49 A versatile, high accuracy, pulsed measurement device

Speaker

Mario Jurcevic

10:48–10:50

51 Exploration on Quasi-Steady-State Real-Time Data Access for EAST Tokamak

Speaker

Ying Chen

10:50–10:52

68 Low-latency digital control of an all-in-fiber phase noise reduction loop for VIRGO Squeezer

Speaker

Marco Toffano

10:52–10:54

81 FPGA-Accelerated Pattern Recognition for the ATLAS Event Filter at the HL-LHC

Speaker

Priya Sundararajan

10:54–10:56

82 Regional reconstruction of tracks for the ATLAS Event Filter using GPU accelerators

Speaker

Benjamin Michael Wynne

10:56–10:58

84 Heterogeneous Acceleration of Graph Neural Networks on Versal ACAP for High-Level Trigger Track Reconstruction

Speaker

zhao-zhi Liu

10:58-11:00

85 A Low-Dead Time FPGA-TDC for Optical Beam-Loss Monitor System**Speaker**

Dr Yuchen Yang

11:00-11:02

86 A Heterogeneous Software Framework Design for the Full Software Trigger at CEPC**Speaker**

xu zhang

11:02-11:04

103 Development of a Coincidence Measurement System for Scattered and Decay Particles Using a Streaming DAQ and Digitizers**Speaker**

Shotaro Maesato

11:04-11:06

37 Electronics for Two-Dimensional Magnetic-Field Measurement in a Polarized-Light Helium Optically Pumped Magnetometer**Speaker**

Xuan Wang

11:06-11:08

126 Design and Results of a Radiation Test System for SEE and TID Assessment of the VLAST-P CsI(Tl) Calorimeter Readout Electronics**Speaker**

JiaAo Zhang

11:08-11:10

106 Timing and Slow Control backend for CMS Drift Tube On Board electronics**Speaker**

Antonio Bergnoli

11:10-11:12

65 Data flow management and service of Lingshu plasma control system**Speaker**

jq zhu

11:25

Wednesday 27 May

10:20

Mini Orals

Session | **Location:** Hotel Hermitage, Maria Luisa Room

10:20–10:22

27 FPGA-Deployed Variational Autoencoder for Real-Time Soft X-Ray Electron Temperature Reconstruction in RFX-mod2

Speaker

Luca Orlandi

10:22–10:24

52 Design-Space Exploration and Integer Quantization of Graph Neural Networks for Real-Time FPGA Track Finding

Speaker

Andrea Cardini

10:24–10:26

75 An Initial Study of Neural-Network-Assisted Approaches for Drift Chamber Tracking

Speaker

Mr Viet Nguyen

10:26–10:28

99 Real-time Autoregressive Evolution of Tokamak Plasma Magnetic Measurements

Speaker

Dr Shuai Li

10:28–10:30

119 Benchmarking Neural Network Inference on Versal ACAP AI Engines for Real-Time Detector Alignment

Speaker

Akshay Malige

10:30–10:32

218 Single-Detector Cosmic-Ray Muon Identification in Plastic Scintillators Using Machine Learning

Speaker

Hai Vo

10:32–10:34

219 Self-Supervised and Semi-Supervised Machine Learning for Waveform-Based Neutron/Gamma Discrimination in EJ-276 Plastic Scintillator

Speaker

Hai Vo

10:34–10:36

215 Fueling modeling and control for ITER start of research operation

Speaker

David Weldon

10:36-10:38

100 Temperature-Induced Delay Drift in Xilinx FPGA Multi-gigabit Transceivers**Speaker**

Yonggang Wang

10:38-10:40

114 Deep Learning-Based Real-Time Error Detection in Radiotherapy with EPID Images**Speaker**

Emmanuel Uwitonze

10:40-10:42

144 Realization of Large Model-Driven Tango Control and Data Interaction Analysis Tool**Speaker**

Xiaochuan Xie

10:42-10:44

146 A Virtual Gamma-ray Spectrum Database for Training in Seawater Radioactivity Analysis**Speaker**

Wanook Ji

10:44-10:46

156 The Realization of Ultra-High Dose Rate and Potential Frontier Applications on 230 MeV SC Cyclotron CYCIAE-230**Speaker**

Prof. Tianjue Zhang

10:46-10:48

167 Physics-Aware and Hardware-Efficient Federated Learning for Isotope Identification in Distributed Edge Radiation Networks**Speaker**

Ms Yuxin Wu

10:48-10:50

210 Application of the FPGA Coprocessor TM FAST for Siemens S7-1500 PLCs in Neutron Instruments**Speaker**

Harald Kleines

10:50-10:52

214 A common framework for real-time structured data communication in fusion devices**Speaker**

Dr Nicolo Ferron

10:52-10:54

96 A Low-Latency Distributed Machine-Protection System for the PIP-II Linear Accelerator

11:05

Speaker

Dr Jonathan Daniel Eisch

Thursday 28 May

10:40

Mini Orals

Session | **Location:** Hotel Hermitage, Maria Luisa Room | **Convener:** Martin Grossmann PSI

10:40-10:42 **134 FPGA based RDMA for BEE Readout**

Speaker

Chang Xu

10:42-10:44

135 FPGA-Based Deep Learning Acceleration for Real-Time \mathbb{Z}_2 -Vertex Reconstruction in STCF L1 Trigger

Speaker

Shuangshuang Zhang

10:44-10:46

136 Implementation of an Acquisition and Monitoring Module Based on the PTPv2 Protocol on EAST

Speaker

Zuchao Zhang

10:46-10:48

148 Data Processing Firmware of the Upstream Tracker for LHCb Run 3

Speaker

Carlos Abellan Beteta

10:48-10:50

150 A Real-Time Trigger and DAQ System for the MuEDM Experiment

Speaker

Carlo Veo

10:50-10:52

152 Operations and Performance of the ATLAS Tile Calorimeter Phase-II Upgrade Demonstrator in Run 3

Speaker

Danijela Bogavac

10:52-10:54

153 Studies of track reconstruction performance in the ATLAS Event Filter for the HL-LHC

Speaker

Marco Aparo

10:54-10:56

166 Toward Efficient Wireless Monitoring in Nuclear Facilities Based on Named Data Networking

Speaker

Ziwen Lu

10:56-10:58

173 Partial restart of a distributed data acquisition system

Speaker

Yoichi Igarashi

10:58-11:00

177 A 10-ps Resolution Direct-Digitizing Time Measurement ASIC for Fast Detectors**Speaker**

Zhuang Li

11:00-11:02

179 Design of Prototype Readout Electronics of the High Counting Rate Main Drift Chamber in Particle Physics Experiments**Speaker**

Yilin Ma

11:02-11:04

180 Prototype Readout Electronics System for a LET Spectrometer in Space Radiation**Speaker**

Mr Wenrui Sun

11:04-11:06

190 A 14-bit 100 Ms/s Pipeline ADC for Silicon Pixel Sensor in Gaseous Detectors**Speaker**

Haoqing Xie

11:06-11:08

194 Performance Test of the SAMIDARE Board with Mini-TPC using heavy-Ion Beams**Speaker**

Fumitaka ENDO

11:08-11:10

216 A Packaged Streaming-Readout Data Acquisition System by the SPADI Alliance for Nuclear and Particle Physics Experiments**Speaker**

Nobuyuki Kobayashi

11:10-11:12

115 Modular Ground Penetrating Radar Tomography System with a Combination of Star and Daisy Chain DAQ and Trigger Topologies with Picosecond Accuracy**Speaker**

Dr Achim Mester

11:12-11:14

200 Design of a Novel Pipelined SAR ADC for Multi-channel Front-end ASICs**Speakers**

Mr Haoqing Xie, Prof. Chengxin Zhao

11:14-11:16

162 A Timing Measurement Prototype for LGAD Using the LATRIC ASIC**Speakers**

Chuanye Wang, Xiongbo Yan