



10th

Program of the International School on Signal Processing and its Applications



Session Chairs: Pr. A. BELOUCHRANI, Dr. T. ZIANI, Dr. O. MAHFOUDIA, Dr. N. LASSAMI and Dr. L. HARKATI

Day 1: December 22, 2025

Poster Session 1

10^h15-11^h15 ▶ Hall CEDOC

- P1-1 ▶ Application of a multilayer perceptron network for speech enhancement: A. BOUHOUS (CRSTDLA)
- P1-2 ▶ Experimental validation of a UWB SFCW SDR-based through-wall radar imaging system with compressive sensing: A. BELLABAS (IRD-DAT)
- P1-3 ▶ An innovative design of reconfigurable printed RFID dipole antenna for UHF applications:
A. BENDAOUDI, M. DEBAB, K. BENKHALOUK, and Z. MAHDJOUR (University of Sidi Bel-Abbes)
- P1-4 ▶ Design and experimental validation of an FPGA-based IR-UWB chaotic radar for human respiratory rate localization:
C. CHABBAT, A. MAALI, and M. S. AZZAZ (EMP)
- P1-5 ▶ A Gridless GLRT approach for accurate and efficient 3D TomoSAR reconstruction: M. E. BENSMINE (URD-RT)
- P1-6 ▶ Removing non-invasive brain stimulation artifacts via joint blind source separation: M. AZZOUZ (EMP)
- P1-7 ▶ Amortized variational inference framework for enhanced logistic regression with incomplete covariates: M. CHERIFI (EST)
- P1-8 ▶ The logarithmic transformation of compound Nakagami returns and its implication in HRR CFAR detection: N. NOUAR (ENP)

Poster Session 2

15^h00-16^h00 ▶ Hall CEDOC

- P2-1 ▶ Intelligent SDN security: comparative study of ML models for detecting DDoS and ARP spoofing attacks: A. HAFSI, F. MERAZKA (USTHB)
- P2-2 ▶ Optimized pre-processing for enhanced machinery diagnostics: A. W. LOURARI, A. H. BOUCHAREB, B. ELYOUSFI, and T. BENKEJOUH (EMP)
- P2-3 ▶ A Novel hybrid "AI-ALE" protocol based on deep learning and Thompson sampling for adaptive HF link optimization: A. JOUINI (CRDT)
- P2-4 ▶ Proposal for new radar detection architecture based on the KBS (Knowledge-Based Systems) exploitation:
A. ROUABAH, M. HAMADOUCHE, D. TEGUIG, and H. ZERAOULA (ESDAT)
- P2-5 ▶ Acoustic noise reduction in aircraft communications based on the DRNQ algorithm: A. BENTAHAR, and H. ABADLIA (CRD-FA)
- P2-6 ▶ Dynamic human hand gesture recognition using ultra-wide band radar signals and neural networks: A. K. MEZALI (IRD-DAT)
- P2-7 ▶ Joint diagonalization using approximated pseudo-parallel Givens rotations: A. ACHEBI (EST)
- P2-8 ▶ Low-cost approximate systolic array accelerator design for FPGA-based efficient DNN processing:
A. FELLOUH, F. GHAFARI, O. ARAAR, S. SAKHI, P. GAUSSIER (EMP)
- P2-9 ▶ Seismic signals sensing for target detection and classification: F. BETOUCHE, M. BENBAGHDAD, and S. TALOUL (CRDT)
- P2-10 ▶ Design and evaluation of a speech scrambler communication system for wired and wireless FM networks:
H. ABADLIA and A. BENTAHAR (CRD-FA)
- P2-11 ▶ Hybrid physical-layer and lightweight cryptographic authentication scheme for secure UAV swarm communication:
M. OUADAH, and F. MERAZKA (USTHB)

Day 2: December 23, 2025

Poster Session 3

09^h45-10^h45 ▶ Hall CEDOC

- P3-1 ▶ Innovative ROM-Free direct RF LFM waveform synthesis for SDR radar application: B. GHEZALI (IRD-DAT)
- P3-2 ▶ Radar based apnea detection via breathing signals anomalies: H. GHILASSI (DCNSI)
- P3-3 ▶ UAV-based embedded system for automatic license plate recognition: H. HAMIL, A. KECHIDA, and B. BENMOUSSA (CRTI)
- P3-4 ▶ From LFM to LORA: simulation and analysis of chirp-based waveforms for IoT systems: K. TOURCHE, A. KIFOUCE, and M. S. AZZAZ (IRD-DAT)
- P3-5 ▶ Modeling of nonlinear systems using a multi-model decoupled-state approach application to a PCB welding system:
S. KHAOUNI, and K. E. HEMSAS (Ferhat Abbas Sétif University 1)
- P3-6 ▶ Optimization of parameter selection for CFAR radar detectors: M. THAMERI (ESDAT)
- P3-7 ▶ Hybrid post-quantum security for UAV sensing and communication networks: M. D. DRIA (EMP)
- P3-8 ▶ Modeling and analysis of the behavior of transmitted signal through underwater optical wireless communication channels:
M. SAID ERRAHMANI, N. BELGHACHEM, and H. MEDJADBA (ESM)
- P3-9 ▶ Hardware acceleration of machine learning based signal processing technics: M. SAOUDI (IRD-DAT)
- P3-10 ▶ Hybrid Vision-Swin transformer for automated wheat yellow rust severity estimation: N. BOUADJENEK (ENP)
- P3-11 ▶ Analyzing the effectiveness of clustering-based ML approaches in Coo-SS: O. NESRAOUI, D. TEGUIG and S. SADOUDI (EMP)

Day 3: December 24, 2025

Poster Session 4

10^h15-11^h15 ▶ Hall CEDOC

- P4-1 ▶ A Unified framework for cooperative compressed spectrum sensing: user activity detection: H. A. BENZATER (IRD-DAT)
- P4-2 ▶ Synchrosqueezed wavelet transforms for tool wear monitoring: superior time-frequency representations for deep learning:
O. REDJAIMIA, H. HABBOUCHE, and T. BENKEDJOUH (ENPEI)
- P4-3 ▶ Q&A to understand Cramér-Rao, Ziv-Zakai and Weiss-Weinstein bounds: applications in mobile networks: S. S. BELAIFA (DJEZZY TELECOM)
- P4-4 ▶ Application of sparse compressed sensing in direction of arrival estimation: S. E. MEZIANI (IRD-DAT)
- P4-5 ▶ Joint optimization beamforming and phase shift in RIS assisted OTFS: S. DJENANE (ECRMT)
- P4-6 ▶ Lightweight vision transformers for robust and explainable diagnosis of acute Lymphoblastic Leukemia in clinical setting:
L. BOUNIF, and A. SERIR (USTHB)
- P4-7 ▶ Learned waveform: OFDM receiver via deep complex neural networks: W. BOUKERNE, O. NESRAOUI, D. TEGUIG and S. SADOUDI (EMP)
- P4-8 ▶ Impact of LED nonlinearities and bandwidth constraints on DCO-OFDM performance in VLC systems:
Y. LAIB, N. BELGHACHEM and H. MEDJADBA (EMP)
- P4-9 ▶ Radio frequency interference characterization in SAR images: Y. MESLOUB, O. MAHFOUDIA and A. BOUARABA (EMP)
- P4-10 ▶ FPGA-accelerated real-time fusion of video and radio signals for joint communication and sensing using hardware/software Co-Design:
R. KAIBOU (DPDSD-VF/CFA)