

2022

Korea Advanced Institute of Science and Technology
Technical University of Denmark

KAIST-DTU Workshop for Acoustics, Hearing and AI

Date 21st Oct 2022 9:30 ~ 17:30

Venue Central Hall, ME, KAIST #1601(1st floor)



Programs

9:20	Welcome	Finn Agerkvist / Yong-Hwa Park
Session 01 Design of acoustical systems		
9:30	Material models in loudspeakers using frictional elements	Finn Agerkvist (DTU)
9:45	Parameter estimation for loudspeaker models	Franz Heuchel (DTU)
10:00	Vibration characterization and modeling of the balanced armature receiver	Birgitte Steen Bække (DTU)
10:15	Discussion with Coffee Break	All
10:30	An accurate HRTF measurement for binaural source identification	Yong-Hwa Park (KAIST)
10:45	Efficient tire pattern design using deep learning	Ikjin Lee (KAIST)
11:00	Simulation-driven design in audio products and its challenges	Junghwan Kook (GN Audio)
11:15	Periodicity-induced noise reduction by barriers made of resonator arrays	Jieun Yang (TU Eindhoven)
11:30	Discussion with Coffee Break	All
11:45	Lunch break (@Faculty club)	
Session 02 Advanced theory of acoustics		
13:30	Recent developments and challenges regarding viscous and thermal losses in acoustics	Vicente Cutianda Henríquez (DTU)
13:45	Towards large-scale boundary element computations including viscous and thermal losses	Mikkel Paltorp Schmitt (DTU)
14:00	Modeling (meta-)materials, and manufacturing of acoustic-mechanical microsystems	Frieder Lucklum (DTU)
14:15	Discussion with Coffee Break	All
Session 03 Sound processing and source localization by AI		
14:30	Room geometry inference and audio enhancement for metaverse applications	Jung-Woo Choi (KAIST)
14:45	Deep learning based acoustic deconvolution	Jiho Chang (KRISS, Vizwave)
15:00	Localizing sources with a spherical convolutional neural network	Xenofon Karakonstantis (DTU)
15:15	Improvement of the vibro-acoustic source reconstruction using the optimized sparse hologram	Laixu Jiang/Jeong-Guon Ih (KAIST)
15:30	Binaural source localization and event detection	Gyeong-Tae Lee/Yong-Hwa Park (KAIST)
15:45	Discussion with Coffee Break	All
Session 04 Hearing science and applications		
16:00	AI-based audiovisual speech separation	Jens Hørtkjær (DTU)
16:15	Cognitive control of a hearing aid	Jonathan Mårcher-Røersted (DTU)
16:30	The role of phase coherence in sound for signal detection in noise	Yoonseob Lim (KIST)
16:45	HRTF individualization for metaverse applications	Byeong-Yun Ko/Yong-Hwa Park (KAIST)
17:00	Wrap-up for collaborations	All

Contact Prof. Yong-Hwa Park yhpark@kaist.ac.kr

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