Young Acousticians Network Newsletter #131 March 2024

Newsletter's Summary

Agenda

Get a reminder on upcoming events and deadlines. Feel free to contribute if you become aware of any change!

News

This month, we're highlighting three summer schools for acousticians and an invitation to the IEEE SPP 1st LAP Challenge.

Job announcements

Find your dream job in this fresh list of opportunities! If you wish to announce a position, please email the YAN team.

Publications

This month, find a publication by Michael J. B. Lotinga discussing the noise from unconventional aircraft: A review of current measurement techniques, psychoacoustics, metrics and regulation.

Upcoming Events

March 2024

18th- 21st DAGA 2024 50th Annual Conference on Acoustics
Hannover, Germany

20th IOA "Becoming an Expert Witness"
Hybrid

22nd IOA "The Art of Being an Acoustician"
Southampton, UK

April 2024

09th DSC "Audio Development Using Gaming Engines"
Online - Zoom

16th DSC "Realtime AI Speech Enhancement in Headsets and Earbuds"
Online - Zoom

30th DSC "Immersive Audio & Quality Development in Digital Meetings"
Online - Zoom

May 2024

07th DSC "The Power of the Human Voice"
Online - Zoom

15th - 18th SAM 2024 Symposium on Acoustic Metamaterials #4
Hanasaari, Espoo, Finland

22nd IOA "Artificial Intelligence for Acoustics"
London, UK

22nd- 24th BNAM 2024 Baltic-Nordic Acoustic Meeting 2024
Hanasaari, Espoo, Finland

June 2024

10th - 11th BEBEC 2024 Berlin Beamforming Conference
Berlin, Germany

12th - 14th International Conference ACOUSTICS 2024 High Tatras
Štrbské Pleso, Vysoké Tatry, Slovakia

17th - 20th ICUA2024 International Conference on Underwater Acoustics
Bath, UK

25th - 28th JJBA2024 2nd Emerging Bioacousticians Days
Moulin-Blanc, Brest, France

Upcoming Deadlines

March 2024

15th- SAM 2024
Symposium on Acoustic Metamaterials #4. Aegina, Greece. Abstract submission

20th - DAFx24
27th International Conference on Digital Audio Effects. Surrey, UK. Paper submission

30th - ICSV30
30th International Congress on Sound and Vibration. Amsterdam, Netherlands. Paper submission

31st - IBPC 2024
09th triennial conference of the International Association of Building Physics (IABP). Toronto, Canada. Paper submission

31st - DAGA 2024
50th Annual Conference on Acoustics .Hannover, Germany. Paper submission

31st - Acústica 2024
XIII Congresso Ibérico de Acústica. Faro, Portugal. Abstract submission

31st - IBPC 2024
9th triennial conference of the International Association of Building Physics (IABP). Toronto, Canada. Paper submission

April 2024

01st - JJBA 2024
2nd Emerging Bioacousticians Days. Moulin-Blanc, Brest, France Abstract submission

12th - INTER-NOISE 2024
53th International Congress and Exposition on Noise Control Engineering. Nantes, France Paper submission

19th - BNAM 2024
Baltic-Nordic Acoustic Meeting 2024 .Hanasaari, Espoo, Finland. Paper submission

29th - Acoustics 2024
Manchester, UK. Abstract submission

30th - ICUA2024
International Conference on Underwater Acoustics .Bath, UK. Paper submission

30th - GUWEM
Workshop – Guided Ultrasonic Waves : Emerging Methods. Überherrn , Germany. Abstract submission

May 2024

19th - Quiet Drones 2024
Manchester, UK. Paper submission

20th - BEBEC 2024
Berlin Beamforming Conference. Berlin, Germany. Paper submission

31st - Acoustics 2024 High Tatras
Štrbské Pleso, Vysoké Tatry, Slovakia. Abstract submission

June 2024

28th - Acústica 2024
XIII Congresso Ibérico de Acústica. Faro, Portugal. Paper submission

News

A few summer schools

As we all await the summer, you can start planning which summer school you would like to attend. To start with, ACTOR Timbre and Orchestration creates an interdisciplinary space for musicology, history, music theory, composition, cognitive neuroscience, and acoustics. This special school is not all about lectures, but also brings you small workshops and research roundtables.

If you are more interested in the blue planet, check out the BioAcoustic Summer School (SeaBASS). The University of New Hampshire offers a comprehensive course on underwater acoustics and how you can make a difference as an acoustician.

A more intensive course on the same topic is offered by the University of Southern Denmark. This 2-week summer school includes some technical lectures, tutorials, labs and presentations on bioacoustic topics. Check out the full schedule for Acoustic Communication 2024.

As part of the Immersive Sound and Music Computing conference, you can also register for the 3-day summer school in Porto. SMC 2024 combines the hot topic of immersive sound with art, so you can expect to see various sound installations and live performances throughout the week.

Invitation to the IEEE SPP 1st Listener Acoustic Personalisation Challenge

Personalized Head-Related Transfer Functions (HRTFs) have shown promise in enhancing auditory localization and immersion in mixed realities. However, relevant issues such as the accurate acquisition of user-specific anatomical data, efficient simulation algorithms, and effective user validation do not converge into a common and internationally recognized benchmark for evaluating HRTFs.

The LAP Challenge endeavours to provide a platform where researchers can explore these challenges, advance the state of the art, and contribute to the development of standardized metrics for personalised spatial audio.

The inaugural edition of the challenge will concentrate on two fundamental aspects of HRTFs: spatial sampling and interpolation. Teams are challenged to submit their solutions that address one of two tasks:

- HRTF normalization for merging different HRTF datasets.
- HRTF spatial upsampling to obtain a high spatial resolution HRTF from a very small number of directions.

More information can be found on the SONICOM website: https://www.sonicom.eu/lap-challenge

Questions forum

If you are part of the YAN discord server, you can now enjoy the questions forum channel where you can reach out to the fellow acousticians and get help, inspiration or find people working on similar topics as you. Try it out and expand your network!
Have a look here: https://discord.gg/nTAt8dQ5AV

Let's get loud!

Sound off! Share your latest acoustics news & events

News flash! Have an acoustics story to share? Please tell us!
eaa.yan@euroacoustics.org

Share your acoustics projects, discoveries, thoughts, and insights on the latest in acoustics 🔊😎

Job Announcements

Acoustic Consultant
Bureau De Fonseca. Strombeek, Belgium

Acoustic Consultant
KP Acoustics. London, UK

PhD: Acoustics of open-space offices
INRS. Vandœuvre-lès-Nancy, France

Engineer/Architect Expert in Acoustics
Schroeder & Associés. Luxembourg, Luxembourg.

Technicien d'essais Aeroacoustiques
ONERA. Chatillon, France.

Graduate Acoustic Consultant
Quantum Acoustics.
London/Godalming/Birmingham, UK.

Graduate Acoustic Consultant
AEC. Manchester, UK

Post-Doc: Advanced processing for in-duct microphone array measurements
Laboratory of Vibration and Acoustics, INSA Lyon.
Lyon, France.

Acoustic Engineer
ENERGY AND ENVIRONMENT Ingénieurs-Conseils S.A. Luxembourg, Luxembourg.

PhD in Aeroacoustics
Laboratory of Mechanics and Acoustics LMA
Marseille, France.

Publications

Noise from Unconventional Aircraft: A Review of Current Measurement Techniques, Psychoacoustics, Metrics and Regulation

This review aims to evaluate and discuss the current advances in the measurement and assessment of the noise generated by unconventional aircraft, such as unmanned aircraft systems (UAS) and urban air mobility (UAM) vehicles. Building upon the findings of this review, research gaps are identified, and further work is proposed to enhance existing and emerging methods for the appropriate noise management of these advanced air mobility (AAM) technologies. Noise has been highlighted as one of the key concerns for the wider deployment of UAS and UAM operations. This is suggested to be due to having acoustic signatures with sound characteristics commonly associated with noise annoyance, such as ‘sharpness’ (the perceived proportion of high-pitched sonic energy) and ‘tonality’ (the perceptual prominence of concentrated sonic energy at discrete frequencies).

These types of ‘psychoacoustic features’ are thought to be connected with observations of increased noise annoyance for AAM, compared with conventional aircraft and road vehicles, at the same level of sound exposure. In the last few years, there has been a growing body of research on UAS and UAM noise. Research has focused on a comprehensive understanding of the sound sources of these unconventional aircraft under a wide range of operating and operational conditions.

Based on gathered evidence, measurement protocols for both laboratory and field studies are very advanced for the acoustic characterisation of UAS in terms of sound level, frequency and directivity. Looking at the human response to UAS and UAM noise, loudness has been consistently reported as the main contributor to noise annoyance, with second-order contributions from other psychoacoustic features, such as sharpness, tonality and ‘amplitude modulation’ (fluctuations in loudness over time), varying among studies. Noise targets for UAS certification have been derived from existing regulations for conventional aircraft and rotorcraft, but might not account for the usually reported annoyance offset between UAS/UAM and conventional vehicles. Key research gaps identified include the lack of studies focusing on multiple events, and deeper understanding of the influence that personal or contextual factors may have on responses, which will be important for the development of robust methods for the assessment and minimisation of community noise annoyance due to the operation of these unconventional aircraft.

About the Author

Michael J. B. Lotinga is a PhD student at the University of Salford’s Acoustics Research Centre (UK). His current research is focused on developing psychoacoustic models for subjective perception and response to the sound of emerging aviation technologies, including unmanned aircraft systems and urban air mobility vehicles. His study is part of the EU HORIZON project ‘Reducing Environmental Footprint through transformative Multi-scale Aviation Planning’ which is developing a multidisciplinary digital platform for flight path route optimization to enable operators of conventional and emerging aviation technologies to evaluate constraints, manage impacts, and enhance operational sustainability. In addition to the advanced air mobility applications, his previous research has covered wind turbine noise, amplitude modulation, electrical transformer noise, low frequency sound, and the effects of sound and noise on health and wellbeing. Michael has also worked as a professional engineer in industry roles including product design research and development, and in consulting engineering. His experience has covered a wide range of sectors, with a focus on large-scale infrastructure, railways, industry, and energy generation.

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