International Society of Ecoacoustics

10TH ANNIVERSARY
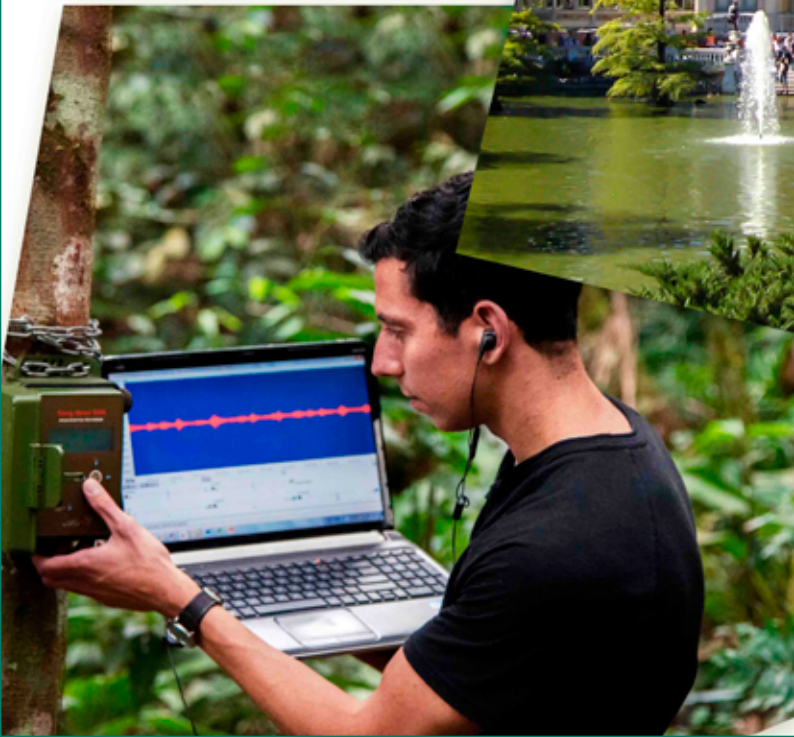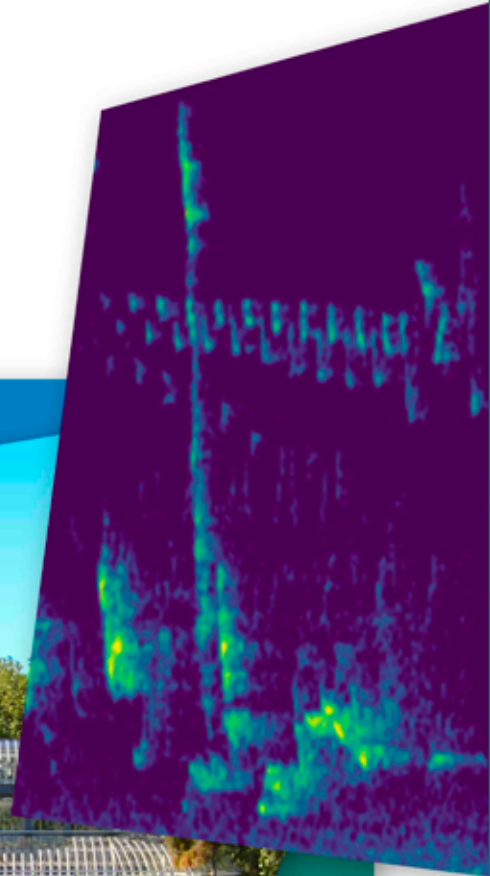
5th World Ecoacoustics Congress

8th – 12th / JULY

Universidad Autónoma de Madrid

MADRID 2024

UAM | FACULTAD DE CIENCIAS

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Welcome

Nature breathes, moves, sings, screams, and falls silent, in a never-ending dynamic of sounds and vibrations. These sounds tell us thousands of stories, big and small, about the natural processes and environmental changes that our planet is currently experiencing. Should we listen to them, as scientists are doing around the world, we can improve our capacity to assess biodiversity and face the challenge of global change.

The **World Ecoacoustics Congress** (WEC) serves as a global platform for researchers, scientists, technicians, engineers and practitioners to review and debate advances in ecoacoustics. In 2024, the 5th WEC, which will be held from **8th to 12th July in Madrid**, will aim to bring together cutting-edge researchers and the international scientific community around this emerging field. During five days, we will take a tour of the past, present and future of ecoacoustics, with a diverse program of talks, symposia, workshops and other scientific, dissemination and social activities. Combining knowledge from disciplines such as ecoacoustics, bioacoustics, soundscape analysis, artificial intelligence, community ecology, biogeography or conservation biology, the 5th WEC aims to go beyond the borders between disciplines and to achieve a robust and far-reaching multidisciplinary perspective that helps us improve our understanding of natural communities, ecosystems and landscapes.

"Sounds tell us thousands of stories, sweeping and subtle, about natural processes and environmental changes"

Ecoacoustics links the ecological research agenda with new technologies in environmental sound recording and analysis, and hence it has become a field of research that has notably grown around the world in recent decades. In this edition, we will celebrate the **10th anniversary** of the International Society of Ecoacoustics (ISE), a society that was founded at the first Ecoacoustics Congress (Ecology and Acoustics Meeting) held in Paris in 2014. The prospects on passive acoustic monitoring, soundscape analysis, acoustic indices, species identification and machine learning classification, among others, will be central topics of the 5th WEC. This event will be dedicated to our colleague and friend, **Gianni Pavan**, who sadly passed away in 2023 and whose role in ecoacoustics was seminal.

In the unique natural setting offered by the campus of the Autonomous University of Madrid, located near the vibrant city of Madrid, the 5th WEC will offer a space for exchange and networking among emerging and experienced international researchers, together with the presence of the leading companies in the sector that will present the latest developments in equipment and services. Along with other initiatives, attendees will be able to participate in the **publication of a monograph**, entirely dedicated to the Congress and published by a prestigious publisher. In addition, the social program will invite attendees to enjoy all the tourist and cultural attractions of the city of Madrid and its magnificent surroundings, including the Sierra de Guadarrama National Park, the habitat of emblematic species such as the Spanish imperial eagle, the Iberian wolf, the Iberian desman, the common midwife toad, the ocellated lizard and the Spanish moon moth.

"A four-day tour of the past, present and future of Ecoacoustics research and an opportunity for exchange and networking in a unique natural setting"

There are plenty of reasons to participate in what we hope will be a historic, inspiring and exciting event, which will leave pleasant memories for all attendees. Let's listen to what nature has to tell us.

We look forward to seeing you there!

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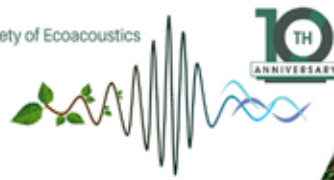
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International Society of Ecoacoustics · 10TH ANNIVERSARY

Programa Científico

Monday 8th july

09:00-19:00h. Reception / Sponsors & Exhibitions

09:00-13:00h. Scientific Workshop. Introduction to machine learning techniques for passive acoustic monitoring

Aula 001

Coordinator & Speaker:
Juan Sebastián Cañas Silva
Instituto Humboldt. Colombia

Speakers:
Santiago Ruíz Guzmán
University of Pittsburgh. USA

Mélisande Teng
Université de Montréal/Mila. Canada

09:00-13:00h. Scientific Workshop. BirdNET for all: creating custom ML models with the BirdNET GUI

Aula 002

Coordinator & Speaker:
Larissa Sayuri M. Sugai
K Lisa Yang Center for Conservation Bioacoustics, Cornell lab of Ornithology, USA

Speakers:
Dena Clink
K Lisa Yang Center for Conservation Bioacoustics, Cornell lab of Ornithology, USA

Wendy Erb
K. Lisa Yang Center for Conservation Bioacoustics. USA

Josef Haupt
BirdNET team, Germany

Max Mauermann
BirdNET team, Germany

10:45-11:15h. Coffee break

11:15-13:00h. Symposium. Art and Ecoacoustics

Sala de Grados

Chairperson:
Laia Malo
Spain

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- **Compositions and installations with eco- and bio-acoustic sounds: intentions, methods, processes and insights.**

  Speaker:

  Kirsten Reese
  Germany

- **A personal journey through soundscapes.**

  Speaker:

  Eloisa Matheu
  Spain

- **Insecta Dance Music. Electronica from Balearic insect sounds.**

  Speakers:

  Laia Malo
  Spain

  Jaume Reus-Viver
  Spain

- **Roar - meaning (Video)**

  Speaker:

  Martín Virgili
  Centro de Arte y Ciencia de la UTN Mar del Plata (Argentina)

- **General discussion**

13:00-14:30h. Time for lunch

14:30-15:30h. Welcome session

Salón de Actos

15:30-16:30h. Plenary Talk. The acoustic ecology of insect-plant interactions

Salón de Actos

Speaker:

Reginald B. Cocroft
Division of Biological Sciences, University of Missouri, USA

Chairperson:

Julia Gómez Catasús
Universidad Autónoma de Madrid, Spain

16:45-17:45h. Open Talks. 1: Advances in BirdNET. Part 1

Salón de Actos

Chairperson:

Dena Clink
K Lisa Yang Center for Conservation Bioacoustics, Cornell lab of Ornithology, USA

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The potential of acoustic monitoring to inform and expand common bird monitoring

Speaker:

Mark Wilson
Head of Science, British Trust for Ornithology Scotland, Stirling, UK

Towards Automated Quantification of Species Detectability in Passively Recorded Audio with Simulated Data and Machine Learning

Speaker:

Ruari Marshall-Hawkes
Department of Zoology. University of Cambridge. Cambridge. United Kingdom.

Methods of acoustic data analysis affect species detectability in passive acoustic monitoring

Speaker:

Dominika Winiarska
Department of Behavioural Ecology, Adam Mickiewicz University in Poznań, Poland

Evaluation and application of BirdNET: identification of bird species by their sounds

Speaker:

Yi-Chin Tseng
PhD in Avian Acoustics. Passive acoustic monitoring. University of Northern British Columbia. Prince George. Canada

16:45-17:45h. Open Talks. 2: Biotremology and soil acoustics

Aula 002

Chairperson:

Renata S. Sousa-Lima
EAR Hub, Universidade Federal do Rio Grande do Norte, Brazil

Is it possible to improve carbon cycle models using soil acoustics? A call for interdisciplinary research collaboration between the greenhouse gas flux and the ecoacoustics communities

Speaker:

Carolyn-Monika Görres
Scientist, Hochschule Geisenheim University, Geisenheim, Germany

Soil acoustics in tropical forests

Speaker:

Oliver Metcalf
Lancaster Environment Centre, Lancaster University. UK

Ecoacoustics for soil health – the sounds of the underground

Speaker:

Carlos Abrahams
Baker consultants. UK

16:45-17:45h. Symposium. Sound archives present and future: new challenges of ecoacoustics development

Sala de Grados

Chairperson:

Paulo A. M. Marques
MARE – Marine and Environmental Sciences Centre / ARNET - Aquatic Research Network; Ispa – Instituto Universitário de Ciências Psicológicas, Sociais e da Vida, Lisboa, Portugal.

● **Availability and preservation of Passive Acoustic Monitoring (PAM) recordings for future use**

Speaker:

Paulo A. M. Marques
MARE – Marine and Environmental Sciences Centre / ARNET - Aquatic Research Network; Ispa – Instituto Universitário de Ciências Psicológicas, Sociais e da Vida, Lisboa, Portugal.

● **Fonoteca Zoológica of the Museo Nacional de Ciencias Naturales (CSIC) present and future**

Speaker:

Rafael Ignacio Marquez
Museo Nacional de Ciencias Naturales (CSIC). Spain

● **Xeno-canto a large worldwide community of sound recordists**

Speaker:

Willem-Pier Vellinga
Xeno-canto.org, Stichting Xeno-canto voor natuurgeluiden/Xeno-canto Foundation

● **General discussion**

18:00-19:00h. Open Talks. 3: Advances in BirdNET. Part 2

Salón de Actos

Chairperson:

Wendy Erb
K. Lisa Yang Center for Conservation Bioacoustics. USA

● **Low-cost recorders and BirdNET: An effective combination for monitoring nocturnal and cryptic aquatic birds**

Speaker:

Robert Manzano Rubio
Knowledge Transfer & Technology Specialist. CTFC. Solsona. Spain

● **Evaluating bioacoustic detection software on migrant songbirds in the tropics during the non-breeding season**

Speaker:

Dhruv Varun Cohen
Student. Cornell University. Ithaca, NY. United States of America

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● **Gunshots and gibbons: how transfer learning can improve monitoring efforts of a protected area in Cambodia**

Speaker:

Dena Clink
K Lisa Yang Center for Conservation Bioacoustics, Cornell lab of Ornithology, USA

● **Using BirdNET embeddings to find threatened species: A case study using the Australian Acoustic Observatory**

Speaker:

Slade Allen-Ankins
James Cook University, Townsville, Australia

18:00-19:00h. Open Talks. 4: Monitoring flying insects

Aula 002

Chairperson:

Valentina Zaffaroni Caorsi
Department of Earth and Environmental Sciences. University of Milano-Bicocca. Milan. Italy

● **Balearic Buzzings, a sound guide for pollinators**

Speaker:

Jaume Reus Viver
Biodiversity, field recording, divulgation, sound art. Freelance. Palma. Spain.

● **Design and evaluation of enhanced techniques for acoustic monitoring on bees**

Speaker:

María Victoria Cumia Espinosa de los Monteros
Universidad Autónoma de Madrid, Spain

● **Transformers outperformed CNNs and improve the acoustic bee species recognition task**

Speaker:

José Neiva Mesquita Neto
Pollination Ecology. Laboratorio de Ecología de Abejas Nativas, Facultad de Ciencias Básicas, Universidad Católica del Maule. Talca. Chile

● **The Insect Soundscape Progression Related to Mammalian Cadavers**

Speaker:

Elena Gorgeva
PhD candidate. Faculty of Science and Technology. University of Canberra. ACT. Australia

18:00-19:00h. Symposium. Spatial ecoacoustics: mapping acoustic activity and diversity

Sala de Grados

Chairperson:

Camille Desjonquères
Université Grenobles Alpes. France

● **Environmental sound as a mirror of landscape ecological integrity in monitoring programs**

Speaker:

Manon Ducrettet

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- **Bridging the divide: improving wilderness mapping and conservation by linking human**

  Speaker:

  Jonathan Carruthers-Jones
  Department of Agriculture and Forestry. University of Helsinki. Finland

- **Acoustic Species Distribution Models (aSDMs): a framework to forecast shifts in calling behaviour under climate change**

  Speaker:

  Camille Desjonquères
  Université Grenobles Alpes. France

- **General discussion**

19:00-22:00h. Welcome reception

Outdoor

Tuesday 9th july

09:00-19:30h. Sponsors & Exhibitions

09:00-10:00h. Plenary Talk. We listen. But how do we translate? Connecting sound science

Salón de Actos

Speaker:

Renata S. Sousa-Lima
EAR Hub, Universidade Federal do Rio Grande do Norte, Brazil

Chairperson:

Simon Linke
CSIRO Environment

10:00-10:45h. Poster session & Coffee break. 1

10:45-13:00h. Symposium. Advances in underwater acoustics for management and conservation of aquatic resources

Salón de Actos

Chairpersons:

Francis Juanes
University of Victoria, Canada

Marta Bolgan
Ocean Science Consulting Ltd. Spott Rd. Scotland. UK

- **The importance of being different**

  Speaker:

  Lucia Di Lorio
  University of Perpignan. France

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- **Advances in mesophotic coral reefs acoustics for management and conservation in Polynesia**

  Speaker:
  Xavier Raick
  University of Liege. Belgium

- **Why should we preserve natural soundscapes? The case of the Adriatic Sea.**

  Speaker:
  Marta Picciulin
  National Research Council of Italy

- **Addressing underwater noise: Joint efforts and progress on its global governance**

  Speaker:
  Nikolina Rako
  Blue World Institute. Croatia

- **Passive acoustics for the study of autoecology of emblematic species in marine protected areas**

  Speaker:
  José Miguel Gonzalez-Correa
  University of Alicante. Spain

- **Habitat-mediated soundscape conservation in marine ecosystems**

  Speaker:
  Kieran Cox
  Marine Acoustics. Simon Fraser University and FishSounds. Vancouver. Canada

- **The Freshwater Sounds Archive: A global database for the sounds of freshwater life**

  Speaker:
  Jack Greenhalgh
  Pyrenean Institute of Ecology. Spain

- **Arctic soundscapes - rapid changes in a historically pristine environment and its implications for Arctic marine mammals and Inuit communities**

  Speaker:
  Annika Heimrich
  University of Victoria. Canada

- **General discussion**

10:45-13:00h. Open Talks. 5: Soundscapes patterns and drivers

Aula 002

Chairperson:
Carlos Abrahams
Baker consultants. UK

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- **Understanding disturbance impacts in terrestrial ecosystems through ecoacoustics**

  Speaker:

  Samuel R. P.-J. Ross
  Integrative Community Ecology Unit. Okinawa Institute of Science and Technology Graduate University. Onna-son. Japan.

- **Temporal soundscape characteristics of managed forests: Effects of biotic and abiotic factors on diel patterns**

  Speaker:

  Dominik Arend
  Biology. Geobotany. Albert-Ludwigs Universität Freiburg. Freiburg. Germany

- **Sensory polluted soundscapes: empirical and experimental evaluation in eastern Australia**

  Speaker:

  Susan Fuller
  Queensland University of Technology. Australia

- **Acoustic monitoring of rehabilitated sand mines in south-eastern Australia**

  Speaker:

  Marina Scarpelli Drummond de Almeida
  CSIRO, Brisbane, Australia

- **Soundscape and acoustic clime of a university square: monitoring before depaving and greening renovation**

  Speaker:

  Andrea Potenza
  PhD student. Università degli Studi di Milano-Bicocca. Milano. Italy

- **The Soundscape of the Regional Park of the Ticino Valley: influence of enviromental variables and anthropogenic noise**

  Speaker:

  Giorgia Guagliumi
  Research Scholarship Recipient, Università degli Studi di Milano-Bicocca, Milano, Italy.

- **Monitoring Farmland Avian Biodiversity Using Acoustic Indices in an Agro-ecological Context in the Mediterranean Region: The Case of Gödence Village, Izmir, Türkiye**

  Speaker:

  Irmak Akoglu
  Acoustic Monitoring and Indices. Bogazici Uni Environmental Sciences Institute. Istanbul. Türkiye

- **Understanding through better listening: quantitative soundscape analyses reveal differences between two types of healthy habitats and the effect of distance in coastal habitats**

  Speaker:

  Juan Carlos Azofeifa Solano
  Underwater acoustics. Curtin University, Centre for Marine Science and Technology, Australia

- **First assessment of the marine soundscape of a shallow submarine volcano in its hydro-thermal phase: the Tagoro (El Hierro, Canary Islands)**

  Speaker:

  Jesús Alcázar Treviño
  Bioacoustics. Universidad de La Laguna/Centro Oceanográfico de Canarias. La Laguna. Spain

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10:45-13:00h. Symposium. Multi-eared listening: pathways to equitable partnerships for a transdisciplinary ecoacoustics

Sala de Grados

Chairpersons:

Alice Eldridge
Ecolistening Group. University of Sussex. UK

Leah Barclay
Ecoacoustics and Acoustic Ecology. University of the Sunshine Coast. Queensland. Australia

● Ethical, Epistemological and Ecological importance of equitable partnerships in Ecoacoustics

Speaker:

Alice Eldridge
Ecolistening Group. University of Sussex. UK

● Participatory ecoacoustic monitoring of social-ecological change with Indigenous and local community partners surrounding Indonesia's new capital city

Speaker:

Wendy Erb
K. Lisa Yang Center for Conservation Bioacoustics. USA

● Using Ecoacoustics and other monitoring techniques to work with Traditional Owners to bring Biocultural perspectives to environmental water discussions

Speaker:

Jo Geddes
Goulburn Broken CMA. Australia

● Narrating the Forest: The Cultural Centrality of Storytelling in Participatory Bioacoustics with Forest Fringe Communities in Ghana

Speaker:

Joycelyn Longdon
University of Cambridge. UK

● De-colonising Ecoacoustics

Speaker:

Jo Geddes
Goulburn Broken CMA. Australia

● Collaborative eocaustic art with indigenous methods

Speaker:

Leah Barclay
Ecoacoustics and Acoustic Ecology. University of the Sunshine Coast. Queensland. Australia

● Territory: Indigenous Peoples and the Conservation of Biodiversity

Speaker:

Mónica Chuji Gualinga
Indigenous Kichwa of the Ecuadorian Amazon/ Latin America Director of Indigenous Peoples Rights International. Ecuador

● General discussion

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13:00-14:30h. Time for lunch

14:30-16:00h. Plenary Round Table. Acoustic Indices under debate

Salón de Actos

Speakers:

Tom Bradfer-Lawrence
RSPB Centre for Conservation Science & University of Stirling, UK

Sandra Müller
University of Freiburg, Germany

Sylvain Haupert
National Museum of Natural History (MNHN), France

Mónica Retamosa Izaguirre
Universidad Nacional. Heredia. Costa Rica

Chairperson:

Diego Gil Pérez
Museo Nacional de Ciencias Naturales (CSIC). Spain

16:00-16:30h. Coffee break

16:30-18:15h. Symposium. Machine listening meets passive acoustic monitoring

Salón de Actos

Chairpersons:

Juan Sebastián Ulloa Chacon
Instituto Humboldt. Colombia

Vincent Lostanlen
Centre National de la Recherche Scientifique (CNRS). France

● **Expert-in-the-loop machine learning for large-scale PAM data**

Speaker:

Thiago Gouvea
German Research Center for Artificial Intelligence. Germany

● **Leveraging AI for effective, large-scale passive acoustic monitoring of bats**

Speaker:

Ella Browning
Oxford. UK

● **Soundata, reproducible use of datasets**

Speaker:

Marius Miron
Earth Species Project

● **Transfer Learning from Bird Embeddings to Belugas: Recognizing the "Canary of the Sea"**

Speaker:

Lauren Harrell
Google DeepMind

- **Silent Cities: monitoring large scale changes in urban ecoacoustics during the covid lockdown using deep learning and passive acoustic monitoring**

  Speaker:

  Nicolas Farrugia
  IMT Atlantique

- **General discussion**

16:30-18:15h. Open Talks. 6: Testing and applying acoustic Indices

Aula 002

Chairperson:

Tom Bradfer-Lawrence
RSPB Centre for Conservation Science & University of Stirling, UK

- **The Acoustic Complexity Indices (ACIs): Theoretical and applied perspectives**

  Speaker:

  Almo Farina
  University of Urbino Carlo Bo (UNIURB). Italy

- **Understanding drivers of soundscape characteristics in the UK**

  Speaker:

  Claire Buchan
  Acoustic Ecology. University of East Anglia. Norwich. UK

- **Acoustic entropy (H), Amplitude Index (M) and Acoustic Diversity Index (ADI) predict Habitat-Specific Soundscapes in Urban area**

  Speaker:

  Joao Marcelo Brazao Protazio
  Mathematical-Statistical Modeling. Universidade Federal do Para. Belem. Brazil

- **Impact of FFT Parameters on Acoustic Index Results**

  Speaker:

  James Kemp
  University of Western Australia, Perth, Australia

- **Moving forward standardization for coral reef monitoring by ecoacoustics across ocean basins**

  Speaker:

  Elise Delcour
  Coral reef. Ecoacoustics. REEF PULSE S.A.S / UMR 9220 ENTROPIE. Saint Denis. La Réunion, France

- **Major Soundscape Differences in the West Coast of Scotland are Reflected in Acoustic Indices**

  Speaker:

  Benedict Lancelot Dell
  PhD Student in Underwater Acoustics. University of Southampton. Southampton. United Kingdom

16:30-18:15h. Open Talks. 7: Sensors

Sala de Grados

Chairperson:

Sarab S. Sethi
Department of Life Sciences, Imperial College London, UK

● Acoustic monitoring technology 3.0: towards a roadmap for open-source acoustic monitoring hardware based on the needs and priorities of the ecoacoustics community

Speaker:

José Lahoz-Monfort
Instituto Pirenaico de Ecología (CSIC). Spain

● Real-time bioacoustic monitoring using Edge-AI

Speaker:

Bernd Meyer
Monash University, Dept. of Data Science and AI

● Capturing ecoacoustic data in real-time using embedded audio processing and LoRaWAN

Speaker:

David Kadish
School of Arts and Culture, Malmö University, Malmö, Sweden

● BIRDday: A field autonomous recorder for BIRDeep project

Speaker:

Marcos Novalbos Mendiguchia
Computer Science, U-tad University of Technology, Arts and Design, Madrid, Spain

● Implementation of smart, low-power, low-cost bird acoustic monitoring

Speaker:

Delia Velasco Montero
Instituto de Microelectrónica de Sevilla (CSIC – Universidad de Sevilla). Seville. Spain

● Scalable eco-acoustic monitoring using fully autonomous drones

Speaker:

Milica Ostojic
Life Sciences, Imperial College London, UK

18:30-19:30h. Ecoacoustic concert

Salón de Actos

Invited Artist:

David Monacchi
Italy

Wednesday 10th july

09:00-19:30h. Sponsors & Exhibitions

09:00-10:00h. Plenary Talk. Sensors and AI for autonomous eco-acoustic monitoring

Salón de Actos

Speaker:

Sarab S. Sethi
Department of Life Sciences, Imperial College London, UK

Chairperson:

Paola Laiolo
Instituto Mixto de Investigación en Biodiversidad (UO-CSIC), Spain

10:00-10:45h. Poster session & Coffee break. 2

10:45-13:00h. Open Talks. 8: Behavioural ecology

Salón de Actos

Chairperson:

Manuel B. Morales Prieto
Universidad Autónoma de Madrid, Spain

● Disclosing the architecture and the community level consequences of acoustic interaction networks

Speaker:

Federica Rossetto
Biodiversity Research Institute (CSIC, Oviedo University, Principality of Asturias), Mieres, Spain

● Ecoacoustic Monitoring of the endangered Pink Cockatoo (Lophochroa leadbeateri leadbeateri) in Semi-Arid Eastern Australia: Insights into Spatial and Temporal Patterns

Speaker:

Susan Fuller
Queensland University of Technology. Australia

● Uncoupled evolutionary patterns in spectral and temporal components of acoustic signals in anurans associated with streams

Speaker:

Fernando Vargas-Salinas
Behavioural ecology of Anurans. Biology Program, University of Quindío. Armenia. Colombia

● To respond or not to respond? Acoustic interference between closely related frog species

Speaker:

María Torres Sánchez
Postdoctoral fellow. University Complutense of Madrid. Madrid. Spain

● **Hurry up and sing: early onset of diel calling behaviour and ecological drivers of calling behaviour of Acanthoplus discoidalis**

Speaker:

Aileen Van Der Mescht
Ecoacoustics. University of the Free State. Bloemfontein. South Africa

● **Listening to the Amazonian freshwater giant: using air-breathing sounds to understand pirarucu (Arapaima gigas) dynamics in remote floodplain lakes**

Speaker:

Marisol Valverde Montellano
PhD student at Cornell University

● **Unravelling marine symphonies: fish sound types for effective biodiversity monitoring and management**

Speaker:

Marta Bolgan
Ocean Science Consulting Ltd. Spott Rd. Scotland. UK

● **Is there geographic variation in the whistles of the pantropical spotted dolphin in the Western South Atlantic Ocean?**

Speaker:

Luane Maria Stamatto Ferreira
Laboratory of Bioacoustics & EAR Hub, Universidade Federal do Rio Grande do Norte, Natal, Brazil

● **The whistle repertoire of bottlenose dolphins and its use to estimate abundance**

Speaker:

Carmen Bazúa Durán
Facultad de Ciencias, UNAM, CU, Mexico

10:45-13:00h. Open Talks. 9: Community ecology and monitoring programs

Aula 002

Chairperson:

Samuel Ross
Okinawa Institute od Science and Technology Graduate University, Japan

● **On-board tags reveal wild bat foraging behaviour and prey interaction**

Speaker:

Elena Tena López
TRAGSATEC, Spain

● **Mobile monitoring of bats in agricultural landscapes**

Speaker:

Paula Machin
Wildlife Services

- ## Unveiling hidden diversity: Community composition of bats in agricultural ecosystems in Spain

  Speaker:

  Zeltia López Gallego
  Bat Ecologist. Biodiversity Node S.L., SPAIN

- ## Bat Sonotype As a Novel Insight into the Congo Basin Rainforest Dynamic

  Speaker:

  Yoba Alenga
  Biodiversity and Sustainable forest management. Congolese Youth Biodiversity Network. Bukavu. Democratic Republic of the Congo

- ## Listening to the mountains: towards the application of large-scale passive acoustic monitoring in alpine environments

  Speaker:

  José Lahoz-Monfort
  Instituto Pirenaico de Ecología (CSIC). Spain

- ## Birdsong automatic monitoring using Deep Learning for tracking Doñana's health status

  Speaker:

  Irene Mendoza Sagrera
  Estación Biológica de Doñana (CSIC)Ecology. Estación Biológica de Doñana (CSIC). Sevilla. Spain

- ## A glimpse at island bird diversity and ecological dynamics using the Okinawa Environmental Observation Network

  Speaker:

  Nicholas Friedman
  Curator Ornithology, Leibniz Institute for the Analysis of Biodiversity Change, Germany

- ## Advancing conservation of endemic forest bird species on Christmas Island using acoustic monitoring.

  Speaker:

  Sheryn Brodie
  Zoology and Ecology, College of Science and Engineering, James Cook University

- ## FishSounds: A Global Inventory of Sound-Producing Fishes

  Speaker:

  Kieran Cox
  Marine Acoustics. Simon Fraser University and FishSounds. Vancouver. Canada

10:45-13:00h. Symposium. Density estimation using passive acoustic monitoring: lessons from multiple taxa

Sala de Grados

Chairpersons:

Cristián Pérez Granados
Universidad de Alicante. Spain

Tiago Marques
University of St Andrews. United Kingdom

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- **The fundamental aspects to consider when estimating density from passive acoustic monitoring data: lessons from cetaceans**

  Speaker:

  Tiago Marques
  University of St Andrews. United Kingdom

- **Acoustic monitoring based density estimation of cetaceans and bats**

  Speaker:

  Jens C. Koblitz
  MPI of Animal Behavior. Constance. Germany

- **Vocal activity rate: a simple method for bird density estimation**

  Speaker:

  Cristián Pérez Granados
  Universidad de Alicante. Spain

- **Estimating population sizes of single-species dense aggregations: using an energy-based acoustic index**

  Speaker:

  Laura N. Kloepper
  University of New Hampshire. USA

- **Acoustic monitoring yields informative bat population density estimates**

  Speaker:

  Joy O'Keefe
  University of Illinois Urbana Champaign. USA

- **Assessing Indri indri Population Density and Distribution through Passive Acoustic Monitoring**

  Speaker:

  Valeria Ferrario
  University of Turin, Italy

- **"SonicSpotter" - sound source localisation in a complex calling community of poison frogs**

  Speaker:

  Max Ringler
  University of Bern, Switzerland

- **General discussion**

13:00-14:30h. Time for lunch

14:30-16:00h. Open Talks. 10: New soundscape metrics

Salón de Actos

Chairperson:

Kevin Darras
EFNO research group (Ecosystèmes Forestiers Nogent). INRAE. France

Towards reliable ecoacoustic indices to assess the acoustic biodiversity using passive acoustic monitoring

Speaker:

Sylvain Haupert
National Museum of Natural History (MNHN), France

Contrastive Ecoacoustic Indices: large-scale global soundscape characterization with contrastive inference

Speaker:

Yann Teytaut
Muséum National d'Histoire Naturelle (MNHN). Paris. France

Implementation of an unsupervised deep learning workflow for soundscape exploration

Speaker:

Rouch Jérémy
Acoustics/Signal processing, ENES Bioacoustic Lab/University of Saint-Etienne, Saint-Etienne, France

Graphical Representation of Ecological Heterogeneity in Colombian Oil Palm Plantations Based on Unsupervised Acoustic Analysis

Speaker:

Maria Jose Guerrero Muriel
PhD student, SISTEMIC-Universidad de Antioquia, Medellin, Colombia

Understanding the predictive power of acoustic ecological indicators with reverse correlation

Speaker:

Etienne Thoret
CNRS, Aix-Marseille University, Institut de Neurosciences de la Timone, UMR7289

Sonic Method: a qualitative practice for the analysis of wild soundscapes

Speaker:

Thomas Hull
Soundscape ecology, Falmouth University, Penyrn, United Kingdom

14:30-16:00h. Open Talks. 11: Annotation and platforms

Aula 002

Chairperson:

Oliver Metcalf
Lancaster Environment Centre, Lancaster University. UK

Developing and running a sustainably funded bioacoustic data management platform: the BTO Acoustic Pipeline

Speaker:

Simon Gillings
British Trust for Ornithology (BTO), UK

5th World Ecoacoustics Congress

8th - 12th / JULY
Universidad Autónoma de Madrid **MADRID 2024**

International Society of Ecoacoustics

10TH ANNIVERSARY

● **Automatic Label Evaluator: a user-friendly tool for evaluating sound-classification algorithms applied to nature conservation**

Speaker:

Miguel Ángel Muñoz Mohedano
Computer Sciences. Estación Biológica de Doñana (CSIC). Sevilla. Spain

● **Detecting animal sounds faster in long recordings using Few-Shot Learning: a case study on fish sounds**

Speaker:

Valentin Bordoux
Marine Animal Ecology. Wageningen University. Wageningen. The Netherlands

● **Training Participants to Train Machines: Amplifying Participation in a Bat Acoustic Monitoring Program**

Speaker:

Yves Bas
Vigie-Nature

● **Knowledge co-production drives symbiotic solutions to conservation, ecology and AI: Insights from an ecoacoustics programme in Indonesia**

Speaker:

Frederica Poznansky
Ecoacoustics and Conservation. University of Exeter. Exeter. United Kingdom

● **Neural Network-Based Discrimination of Orca Vocalizations: Towards Real-Time Monitoring and Analysis**

Speaker:

Jonas Philipp Lüke
Departamento de Ingeniería Industrial. Universidad de La Laguna. La Laguna. Spain

14:30-16:00h. Symposium. Acoustic monitoring of biodiversity in transformed landscapes

Sala de Grados

Chairpersons:

Charles Arthur Tebbutt
Department of Natural Resource & Environment, Cornell University, U.S.A.

Camilo Loaiza
Wildlife Conservation Society. Bogotá. Colombia

● **Passive acoustic monitoring of indicator bird species supporting the "Conservation Cocoa" new brand in the northwestern Colombian Amazonia**

Speaker:

Camilo Loaiza
Wildlife Conservation Society. Bogotá. Colombia

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- ## Automated Avian Species Detections to Evaluate Ecosystem Services in Artisanal Rubber Agroforestry

  Speaker:

  Charles Arthur Tebbutt
  Department of Natural Resource & Environment, Cornell University, U.S.A.

- ## Acoustic indices as a proxy for biodiversity? Case studies from Madagascar and Indonesia

  Speaker:

  Saskia Dröge
  Division of Forest. Nature and Landscape. KU Leuven. Belgium. Department of Biology, University of Hildesheim, Universitaetsplatz. Biodiversity, Macroecology and Biogeography, University of Goettingen. Germany

- ## Acoustic indices may be less accurate when applied in biodiverse areas in lower latitudes

  Speaker:

  Wuyuan Pan
  Guangxi Key Laboratory of Forest Ecology and Conservation, College of Forestry, Guangxi University, Nanning, Guangxi 530005, China

- ## Acoustic Sensing For Biodiversity And Habitat Assessment: A Case From Costa Rica

  Speaker:

  Mónica Retamosa Izaguirre
  Universidad Nacional. Heredia. Costa Rica

- ## General discussion

16:00-16:30h. Coffee break

16:30-18:00h. Plenary Round Table. Past, present and future of ecoacoustic research

Salón de Actos

Speakers:

Almo Farina
University of Urbino Carlo Bo (UNIURB). Italy

Susan Fuller
Queensland University of Technology. Australia

Jérôme Sueur
National Museum of Natural History (MNHN). France

Chairpersons:

Camille Desjonquères
Université Grenobles Alpes. France

José Lahoz-Monfort
Instituto Pirenaico de Ecología (CSIC). Spain

18:00-19:30h. ISE General Assembly

Salón de Actos

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18:00-19:00h. Sponsored workshop. Wildlife Acoustics, Introduction to Acoustic Indices for Biodiversity Monitoring

Sala de Grados

Descripción

Acoustic Indices are an emerging technique for biodiversity monitoring, and this workshop provides an overview for anyone considering using them. Learn how common indices like the Bioacoustic Index, Acoustic Complexity Index, Normalized Difference Soundscape Index (NDSI), and others were developed and what acoustic parameters they incorporate. Case studies will be used to explore how Acoustic Indices are being applied in practice. We will use Kaleidoscope Pro analysis software to calculate some indices and discuss the results.

● **An Introduction to Acoustic Indices in Kaleidoscope Pro.**

Speaker:

Fran Tattersall
Wildlife Acoustics, Inc

Thursday 11th july

09:00-19:30h. Sponsors & Exhibitions

09:00-10:00h. Plenary Talk. Putting ecoacoustics into community ecology

Salón de Actos

Speaker:

Larissa Sayuri M. Sugai
K Lisa Yang Center for Conservation Bioacoustics, Cornell lab of Ornithology, USA

Chairperson:

Rafael Ignacio Marquez
Museo Nacional de Ciencias Naturales (CSIC). Spain

10:00-10:45h. Poster session & Coffee break. 3

10:45-13:00h. Symposium. Building a transnational network of terrestrial ecoacoustic monitoring initiatives to share knowledge, establish standards and promote data exchange. Part 1: ongoing programmes

Salón de Actos

Chairpersons:

Sandra Müller
University of Freiburg, Germany

Jonathan Carruthers-Jones
Department of Agriculture and Forestry. University of Helsinki. Finland

● **An overview of worldwide ecoacoustic patterns and research**

Speaker:

Kevin Darras
EFNO research group (Ecosystèmes Forestiers Nogent). INRAE. France

- ## The Australian Acoustic Observatory
  Speaker:
  Linda Schwarzkopf

- ## A neotropical collaborative acoustic monitoring network to assess climate change impacts on anurans
  Speaker:
  Diego Llusia
  Universidad Autónoma de Madrid. Spain

- ## Introduction to sonosylva, a country-scale project for the acoustic monitoring of protected forests
  Speaker:
  Jérôme Sueur
  National Museum of Natural History (MNHN). France

- ## A multi-regional ecoacoustic network to study how organic farming and permanent grassland cover contribute to shape acoustic biodiversity in French farmland soundscapes
  Speaker:
  Luc Barbaro
  INRAE Toulouse. France

- ## Structure and function of acoustic communities in the ORCHAMP observatory
  Speaker:
  Camille Desjonquères
  Université Grenobles Alpes. France

- ## Integrating acoustic monitoring into German national forest monitoring (pilot on selected Levell II plots)
  Speaker:
  Sandra Müller
  University of Freiburg, Germany

- ## Designing and maintaining long-term biodiversity monitoring programs
  Speaker:
  Carlos Abrahams
  Baker consultants. UK

- ## Nordic Sound Research Network (NSRN)
  Speaker:
  Rose Keller
  Norwegian Institute for Nature Research (NINA). Norway

- ## General discussion

10:45-13:00h. Open Talks. 12. Human impacts and conservation

Aula 002

Chairperson:
Elena Tena López
TRAGSATEC, Spain

Making a User–Friendly Monitoring Tool for the Invasive Cane Toad

Speaker:

Ka Wah Leung
James Cook University, Townsville, Australia

Not only birds: BirdNET as a useful tool for automated anuran monitoring

Speaker:

Cristián Pérez Granados
Universidad de Alicante. Spain

Ecoacoustics for effective invasive species management

Speaker:

Marina Scarpelli Drummond de Almeida
CSIRO, Brisbane, Australia

Acoustic detection of invasive species and the values they threaten

Speaker:

Simon Linke
CSIRO Environment

New insights on the ecology and conservation of understorey Amazonian bird species through ecoacoustics

Speaker:

Léa Mariton
Conservation Biology. CESCO – MNHN. Paris. France

Analysis of the Corn bunting song in the presence of air traffic noise

Speaker:

Laura Michelle Godoy Merdano
Ornithology. Complutense University of Madrid. Madrid. Spain

From sky to underwater: Can passive acoustic monitoring substitute to aerial tracking to quantify human use of inland waters?

Speaker:

Vincent Médoc
Associate Professor in Ecology and Behaviour. CRNL / ENES Bioacoustics Research Lab. Université Jean Monnet - St-Etienne. Saint-Etienne. France

Mapping of noise pollution in the lagoon of Bora Bora: A holistic approach towards ecoa-coustic conservation

Speaker:

Lana Minier
PhD student at CRIOBE UAR 3278. Moorea. French Polynesia

Passive acoustic monitoring in Lake Bourget: How noisy is the largest natural French lake

Speaker:

Théophile Turco
Saint-Etienne

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10:45-13:00h. Symposium. Underwater soundscape and noise: modelling, measurements and effects

Sala de Grados

Chairpersons:

Valentina Zaffaroni Caorsi
Department of Earth and Environmental Sciences. University of Milano-Bicocca. Milan. Italy

Manuela Mauro
Department of Biological, Chemical and Pharmaceutical Sciences and Technologies (STEBICEF). University of Palermo. Palermo. Italy

● Characterization of underwater noise in the North Adriatic sea and in Barcelona shore

Speaker:

Giovanni Zambon
Department of Earth and Environmental Sciences. University of Milano-Bicocca. Milan. Italy

● Acoustic Study of Underwater areas in the Mediterranean Sea

Speaker:

Eduardo Ruiz Perez
Underwater, acoustic and non-acoustic signal processing. S.A. de Electrónica Submarina S.M.E. Spain

● Modeling of continuous noise sources: characterization and propagation

Speaker:

Giovanni Petris
Department of Engineering and Architecture, University of Trieste. Italy

● Modeling of seismic sources: characterization and propagation

Speaker:

Alice Affatati
National Institute of Oceanography and Applied Geophysics – OGS. Sgonico. Trieste. Italy

● On the importance of PM and its experimental determination

Speaker:

Jaime Ramis Soriano
University of Alicante. Spain

● Effects of underwater noise on marine Deuterostomes

Speaker:

Valentina Zaffaroni Caorsi
Department of Earth and Environmental Sciences. University of Milano-Bicocca. Milan. Italy

● Acoustic emissions and biological responses of aquatic organisms

Speaker:

Manuela Mauro
Department of Biological, Chemical and Pharmaceutical Sciences and Technologies (STEBICEF). University of Palermo. Palermo. Italy

● General discussion

13:00-14:30h. Time for lunch

Aula 001

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14:30-16:30h. Symposium. Building a transnational network of terrestrial ecoacoustic monitoring initiatives to share knowledge, establish standards and promote data exchange. Part 2: methods

Salón de Actos

Chairpersons:

Jonathan Carruthers-Jones
Department of Agriculture and Forestry. University of Helsinki. Finland

Sandra Müller
University of Freiburg, Germany

● Finnish Soundscapes

Speaker:

Jonathan Carruthers-Jones
Department of Agriculture and Forestry. University of Helsinki. Finland

● Passive acoustic monitoring in nature-based solutions project in the tropical region

Speaker:

Leandro A. Do Nascimento
Biometrio Earth. Saarbrücken. Germany

● Data infrastructures for biological acoustics

Speaker:

Edward Baker
Centre for UK Nature. Natural History Museum. Convenor of TDWG AudiovisualCore Maintenance Group. London. UK

● Ecoacoustic dashboard for long term ecological monitoring

Speaker:

Alice Eldridge
Ecolistening Group. University of Sussex. UK

● General discussion and follow-up activity

14:30-16:30h. Open Talks. 13. Sampling, spatial estimates and decision-making

Aula 002

Chairperson:

Larissa Sayuri M. Sugai
K Lisa Yang Center for Conservation Bioacoustics, Cornell lab of Ornithology, USA

● Proposal for a physical and statistical model of space-time detectability

Speaker:

Ducrettet Manon
Ecoacoustic. Equipe de Neuro-Ethologie Sensorielle, CRNL UMR CNRS 5292. Saint - Etienne. France

● Integrating Compartmentalization Techniques and Landscape Proxies in Spatial Sampling Design for Soundscape Studies

Speaker:

Víctor Manuel Martínez-Arias
Doctoral student. Grupo Herpetológico de Antioquia GHA, Universidad de Antioquia. Medellín. Colombia

● **Listening in: The Value of Passive Acoustic Monitoring for Mammalian Biodiversity Assessment in Australia**

Speaker:

Sebastian Hoefer
James Cook University

● **Multichannel Acoustic Autonomous Recording Unit (MAARU) for Spatial Ecosystem Monitoring**

Speaker:

Becky Heath
Spatial Ecoacoutsics. Department of Zoology, Univeristy of Cambridge, United Kingdom

● **Multi-taxa acoustic monitoring allows for protected area prioritisation for cryptic and nocturnal species in a data-poor region**

Speaker:

Adham Ashton-Butt
BTO

● **Bats, birds, bugs and BNG: developing ecoacoustic guidance for conservation and consultancy**

Speaker:

Carlos Abrahams
Baker consultants. UK

● **Ecoacoustic Research and its representation through intermedia sound art: sonic health of protected ecosystems and anthropogenic impacts on their ecological communities**

Speaker:

Sam Erpelding
Austria

14:30-16:30h. Open Talks. 14. Automated sound classification

Sala de Grados

Chairperson:

Sylvain Haupert
National Museum of Natural History (MNHN), France

● **Automatic animal sound identification: a comparative study**

Speaker:

Maria Jose Guerrero Muriel
PhD student, SISTEMIC-Universidad de Antioquia, Medellin, Colombia

● **The Effects of Noise Reduction on Bioacoustic Segmentation and Classification**

Speaker:

Ben McEwen
Computational Bioacoustics. Computer Science and Software Engineering Department, University of Canterbury. Christchurch. New Zealand

● **Decoding the Sounds of Doñana: Advancements in Bird Detection and Identification Through Deep Learning**

Speaker:

Alba Márquez-Rodríguez
Computer Science. Estación Biológica de Doñana. Sevilla. España

● **All Thresholds Barred: Direct Estimation of Call Density in Bioacoustic Data**

Speaker:

Amanda Navine
Bioacoustic Research. University of Hawaii at Hilo. Hilo. Hawaii. United States

● **Wind detection in soundscape recordings using the YAMNet pre-trained Convolutional Neural Network**

Speaker:

Francesca Terranova
PhD Student. Department of Life Sciences and Systems Biology, University of Turin, Turin, Italy

● **Unsupervised Multi-Species Call Identification through Soundscape Decomposition**

Speaker:

Maria Jose Guerrero Muriel
PhD student, SISTEMIC-Universidad de Antioquia, Medellin, Colombia

16:30-17:00h. Coffee break

17:00-18:30h. Plenary Round Table. Integrating PAM on management and monitoring programs

Salón de Actos

Speakers:

Simon Gillings
British Trust for Ornithology (BTO), UK

Lluís Brotons
Ecological and Forestry Applications Research Centre (CREAF) and EuropaBon, Spain

Francisco Guil Celada
Red Natura 2000, Ministerio para la Transición Ecológica y el Reto Demográfico, Spain

Adria López Baucells
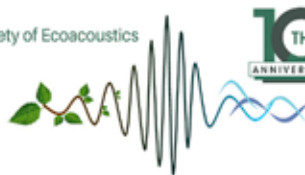*Natural Sciences Museum of Granollers and Eurobats, Spain*
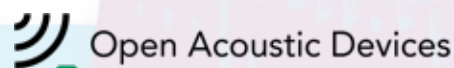
Chairperson:

Gerard Bota Cabau
Forest Science and Technology Centre of Catalonia (CTFC). Spain

18:30-19:00h. Awards and Closing ceremony

Salón de Actos

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