Major acoustical science and technology conference: Nov. 15-19

EurekAlert

October 21, 2010 -- Experts in acoustics (the "science of sound") from around the world will gather in Cancun next month to present their latest discoveries and innovations: cheap, clean stoves for poor countries, ultrasound technologies that count the heartbeats of a fetus, quieter wind turbines, measurements of whale activity in the wake of the recent oil spill and investigations into the origins of laughter.

The 2nd Pan-American/Iberian Meeting on Acoustics, sponsored by the Acoustical Society of America (ASA), the Mexican Institute of Acoustics (IMA), and the Iberoamerican Federation of Acoustics (FIA), takes place November 15-19. Research topics to be covered include architecture, animal communications, engineering, oceanography, medicine, music and psychology.

This press release is the first of several highlighting newsworthy talks and presentations. Journalists may receive complimentary registration to this meeting using the information found at the end of this release. Reporters who cannot attend in person may cover the meeting remotely using ASA's World Wide Press Room, which will go live one week before the conference begins.

Preliminary Meeting Highlights

1. Clean, Cheap Stoves for Poor Countries
2. Aftermath of Deepwater Horizon Spill for Whales
3. Hospital Noise Impacts Patients
4. Drawing Energy from the Ocean
5. Bugs Instant Message Using Plants
6. Whales Sing Louder With Their Tails Up
7. New Technology Counts Fetus Heartbeats
8. Quieter Wind Turbine Blades Designed
9. Hearing Aid Power Source Shrunk
10. Is Laughter Learned?
11. Sound-Absorbing Materials Made from Recycled Bottles
12. Mayan Pyramids Provided Political Grand Stand
13. Prehistoric Rock Band Revealed
14. Quiet in the Theater
15. Dolphins Hush When Killers Lurk

1) Clean, Cheap Stoves for Poor Countries "Recent research demonstrates that fan aided combustion creates a significant decrease in products of incomplete combustion that degrades indoor air quality and exacerbates global warming. This

presentation will describe a very simple cogenerator prototype … that can generate the few watts of electrical power necessary to operate the fan and charge a battery." See: http://asa.aip.org/web2/asa/abstracts/search.nov10/asa339.html [1]

2) Aftermath of Deepwater Horizon Oil Spill for Whales "The area near the Deepwater Horizon incident was abundant with a variety of marine mammals, including endangered sperm whales and beaked whales. The baseline density estimations from acoustic data for sperm and beaked whales in the vicinity of the incident are presented and compared to available data derived from visual surveys." See: http://asa.aip.org/web2/asa/abstracts/search.nov10/asa506.html [2]

3) Hospital Noise Impacts Patients
"This presentation will discuss a pilot study that focuses on the relationships between acoustic measurements and patient physiology in a Swedish medical surgical intensive care unit. The data demonstrated a statistically significant relationship between the recorded physiological responses and acoustic measurements."
See: http://asa.aip.org/web2/asa/abstracts/search.nov10/asa59.html [3]

4) Drawing Energy from the Ocean
"A generic energy conversion device at the ocean surface is considered. Knowledge of the maximum capture length enables a quick assessment of whether any proposed wave energy farm will deliver a desired amount of power."
See: http://asa.aip.org/web2/asa/abstracts/search.nov10/asa341.html [4]

5) Bugs Instant Message Using Plants
"For plant-dwelling insects, substrate-borne sound signaling remains the best solution for communication in dense vegetation typical for the tropics. They communicate with vibratory signals of the dominant frequency around 100 Hz, which travel through plants with low attenuation, creating standing wave conditions in the plant's rod-like structures."
See: http://asa.aip.org/web2/asa/abstracts/search.nov10/asa575.html [5]

6) Whales Sing Louder With Their Tails Up
"Male humpback whale song is thought to mediate inter and intrasexual interactions and to have an important role in mating strategies. This behavior was investigated on the Abrolhos bank off Brazil. The results show that males increase the acoustic area of their song by almost nine times singing underwater or in the tailup posture and, for the lower frequency components of the song, the tailup posture further increases sound transmission."
See: http://asa.aip.org/web2/asa/abstracts/search.nov10/asa800.html [6]

7) New Technology Counts Fetus Heartbeats
"In utero, monitoring of fetal well being or suffering is today an open challenge due to the high number of clinical parameters to be considered. [Our] results are really encouraging, and they enable us to plan the use of automatic classification techniques in order to discriminate between healthy and suffering fetus."
See: http://asa.aip.org/web2/asa/abstracts/search.nov10/asa146.html [7]

8) Quieter Wind Turbine Blades Designed
"As more turbines are installed near population centers, the environmental impacts associated with these machines, such as noise, are also becoming more obvious. Designs and preliminary measurements of trailing edge modifications to the outboard airfoil sections will be discussed as a means of partial noise mitigation."
See: http://asa.aip.org/web2/asa/abstracts/search.nov10/asa56.html [8]

9) Hearing Aid Power Source Shrunk
"We present a novel miniaturized ultrasonic transcutaneous energy transmission system (TETS) for powering implantable hearing aids. We have developed an ultrasonic TETS that offers comparable efficiency (>30%)to electromagnetic links in a device that, at less than 5 mm diameter, is more than an order of magnitude smaller."
See: http://asa.aip.org/web2/asa/abstracts/search.nov10/asa36.html [9]

10) Is Laughter Learned?
"Vocalizations like screams and laughs are used to communicate affective states, but what acoustic cues in these signals require vocal learning and which ones are innate? This study investigated the role of auditory learning in the production of nonverbal emotional vocalizations by examining the vocalizations produced by people born deaf."
See: http://asa.aip.org/web2/asa/abstracts/search.nov10/asa837.html [10]

11) Sound-Absorbing Material Made from Plastic Bottles
"In controlling environmental noise, a lot of effort is put in place to optimize noise barriers. However, in doing so, the noise barriers are usually made of materials that are difficult to recycle. In this work, alternative polyester wool obtained through processing the polyethylene terephthalate (PET) from recycled plastic bottles is presented."
See: http://asa.aip.org/web2/asa/abstracts/search.nov10/asa424.html [11]

12) Mayan Pyramids Provided Political Grand Stand
"Ancient pyramids were employed by priests and politicians as a high basement in order to make his voice heard in the distance, addressing their people, during the religious ceremonies and sometimes by the government or for social events or to promote a war or a defensive action; this was done when public address systems were not available, so it was a good medium to communicate with large audiences."
See: http://asa.aip.org/web2/asa/abstracts/search.nov10/asa265.html [12]

13) Prehistoric Rock Band Revealed
"The extended millenary galleries of rock art are among the prehistorical treasures in Portugal, a vast territory to explore. In search of the known but elusive proofs of music making, we have encountered specific types of ceremonial rocks that have been silent, with no memory of their use. For the first time, an approach has been made for studying the special little holes rocks, or rochas com covinhas, with an innovative systematic methodology."
See: http://asa.aip.org/web2/asa/abstracts/search.nov10/asa396.html [13]

14) Quiet in the Theater

"The application of impulse response theory with architectural design principles provides a foundation for the acoustical design of drama theaters, linking the perceptions of the audience, acoustical measurements made in completed rooms, and acoustical modeling and simulations of rooms being designed."
See: http://asa.aip.org/web2/asa/abstracts/search.nov10/asa7.html [14]

15) Dolphins Hush When Killers Lurk
"Research has suggested killer whale predation may affect cetacean vocal behavior; however, few data exist to test this hypothesis. Data collected for 19,609 km of visual and acoustic shipboard surveys in the tropical Pacific Ocean were examined to determine if changes in dolphin vocal activity could be attributed to the presence of killer whales. These surveys included 346 detections of three highly vocal dolphin species (genus Stenella),whose whistles can be detected at ranges over 4.6 km."
See: http://asa.aip.org/web2/asa/abstracts/search.nov10/asa580.html [15]

More Information about the 2nd Pan-American/Iberian Meeting on Acoustics

The 2nd Pan-American/Iberian Meeting on Acoustics takes place at the Fiesta Americana Grand Coral Beach Hotel in Cancun, Mexico, Monday through Friday, November 15-19, 2010. The Fiesta Americana Grand Coral Beach Hotel is located at Blvd. Kukulcán km. 9.5, Cancún Hotel Zone, Cancún, Q.R., 77500. The hotel's main numbers are +52 (998) 881 32 00 and, toll-free, 1-888-830-9008.

Useful Links

- Main meeting website: http://asa.aip.org/cancun/cancun.html [16]
- Full meeting program: http://asa.aip.org/cancun/program.html [17]
- Searchable index: http://asa.aip.org/asasearch.html [18]
- Hotel site: http://www.fiestamericanagrand.com/portal/p/es_MX/FAG/FCB/1/0/Availability/showMinisitioM2.do?showContenido=/descripcionhotel/FCBdescripcionhotel_M2.html&idioma=en_MX [19]

World Wide Press Room

In the coming weeks, ASA's World Wide Press Room (www.acoustics.org/press [20]) will be updated with additional tips on dozens of newsworthy stories and with lay-language papers, which are 300-1200 word summaries of presentations written by scientists for a general audience and accompanied by photos, audio and video.

Press Registration

We will grant free registration to credentialed full-time journalists and professional freelance journalists working on assignment for major news outlets. If you are a reporter and would like to attend, please contact Jason Bardi (jbardi@aip.org [21], 301-209-3091), who can also help with setting up interviews and obtaining images,

sound clips, or background information.

SOURCE [22]

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http://www.ecnmag.com/news/2010/10/major-acoustical-science-and-technology-conference-nov-15-19

Links:
[1] http://asa.aip.org/web2/asa/abstracts/search.nov10/asa339.html
[2] http://asa.aip.org/web2/asa/abstracts/search.nov10/asa506.html
[3] http://asa.aip.org/web2/asa/abstracts/search.nov10/asa59.html
[4] http://asa.aip.org/web2/asa/abstracts/search.nov10/asa341.html
[5] http://asa.aip.org/web2/asa/abstracts/search.nov10/asa575.html
[6] http://asa.aip.org/web2/asa/abstracts/search.nov10/asa800.html
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[9] http://asa.aip.org/web2/asa/abstracts/search.nov10/asa36.html
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[12] http://asa.aip.org/web2/asa/abstracts/search.nov10/asa265.html
[13] http://asa.aip.org/web2/asa/abstracts/search.nov10/asa396.html
[14] http://asa.aip.org/web2/asa/abstracts/search.nov10/asa7.html
[15] http://asa.aip.org/web2/asa/abstracts/search.nov10/asa580.html
[16] http://asa.aip.org/cancun/cancun.html
[17] http://asa.aip.org/cancun/program.html
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