

Session 2aABa

Animal Bioacoustics: Tropical Bioacoustics I

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Chair's Introduction—8:00

Invited Papers

8:05

2aABa1. Beaked whale species occurrence in the central Pacific and their relation to oceanographic features. Simone Baumann-Pickering, Anne E. Simonis, Jennifer S. Trickey (Scripps Inst. of Oceanogr., Univ. of California San Diego, 9500 Gilman Dr., La Jolla, CA 92093, sbaumann@ucsd.edu), Marie A. Roch (Dept. of Comput. Sci., San Diego State Univ., San Diego, CA), and Erin M. Oleson (Pacific Islands Fisheries Sci. Ctr., National Oceanic and Atmospheric Administration, Honolulu, HI)

Mesoscale oceanographic features are a major force in structuring the marine environment through processes such as eddy-induced upwelling, and as such effect distribution and aggregation patterns of all organisms along the food chain. It has been shown that top pelagic predators such as cetaceans react to these environmental changes in different ways. We present analysis of frequency-modulated (FM) echolocation pulses of Cuvier's beaked whale (*Ziphius cavirostris*), Blainville's beaked whale (*Mesoplodon densirostris*), and an unknown beaked whale species producing FM pulse type "BWC," possibly ginkgo-toothed beaked whale (*M. ginkgodens*), at five locations in the central Pacific. The recordings were collected at Pearl and Hermes Reef (Northwestern Hawaiian Islands), Kona (Main Hawaiian Islands), Wake Atoll, Tinian, and Saipan (Northern Mariana Islands) between 2008 and 2015, ranging from 4 to 8 years per site. All three beaked whale species were present at all sites in different proportions throughout the recording periods, with a strong nocturnal pattern only for the "BWC" pulse type, yet without seasonal pattern. We examine the varying presence in the context of remotely sensed oceanographic data, including sea surface height deviation, temperature, and salinity, as well as chlorophyll *a* and derived primary productivity.

8:25

2aABa2. Echolocation systems of leaf-nosed bats in Taiwan and Iriomote island, Japan. Hiroshi Riquimaroux (SDU-VT Int. Lab., Shandong Univ., 27 Shanda Nanlu, Jinan, Shandong 250100, China, hiroshi_riquimaroux@brown.edu)

The leaf-nosed bats, *Hipposideridae*, are one of the most common tropical bats found in Asia. Two species of leaf-nosed bats in Iriomote island, *Hepposideros turpis*, and Taiwan, *Hipposideros terasensis*, were compared. They emit short echo location pulses (4-7 ms in duration) consisted of constant frequency (CF) component followed by downward frequency modulated (FM) component. The second harmonics are the most intense frequency component. Comparison lists for two species are shown below. Taiwanese leaf-nosed bats, *Hipposiderous terasensis* CF2: 70 kHz (CF1: 35 kHz) 50-60 g in weight Japanese leaf-nosed bats, *Hepposideros turpis* CF2: 82 kHz (CF1: 41 kHz) 20-30 g in weight threatened species (Red list). Both Taiwan and Iriomote island are at around the same North latitude 25 degrees. Findings from *H. terasensis* and *H. turpis* are introduced and discussed. [Research supported by MEXT, Japan, and Shandong University, China.]

8:45

2aABa3. Melody in my head, melody in my genes? Acoustic similarity, individuality, and genetic relatedness in the indris of Eastern Madagascar. Marco Gamba, Valeria Torti, Giovanna Bonadonna (Life Sci. and Systems Biology, Univ. of Torino, Via Accademia Albertina 13, Torino 10123, Italy, marco.gamba@unito.it), Rose M. Randrianarison (Groupe d'Etude et de Recherche sur les Primates de Madagascar, Antananarivo, Madagascar), Olivier Friard, and Cristina Giacoma (Life Sci. and Systems Biology, Univ. of Torino, Torino, Italy)

Indris (*Indri indri*) are the only singing lemurs and produce different types of songs that can be differentiated according to their temporal patterns. The most distinctive portions of the songs are "descending phrases" consisting of 2-5 units. In our study, indri songs were recorded in the Eastern rainforests of Madagascar from 2005 to 2015. All the recordings were made when the recorder operator was in visual contact with the singing social group and by recognizing individual indris using natural markings. Because the individual songs frequently overlap during the chorus, we extracted the pitch contour of 1084 descending phrases using the program PRAAT. We tested whether the structure of the phrases could provide conspecifics with information about sex and individual identity. We also examined