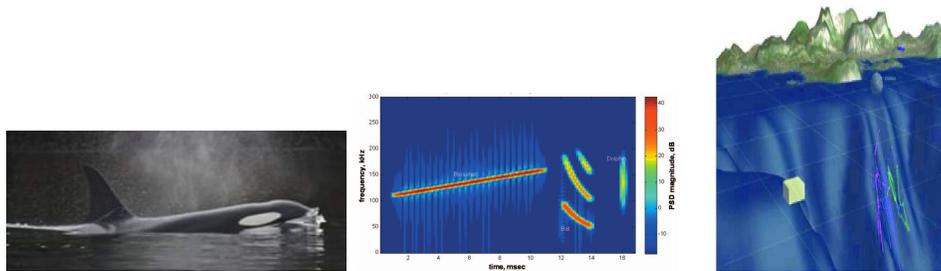


## 2<sup>nd</sup> Environmental Acoustic Big Data workshop

# Learning of Biosonars or Songs & other Models to Survey Marine Mammal

14th November 2018  
room M001, bat M, SeaTech, campus La GARDE  
University of Toulon, France



### *with Seaproven & Biosong SA*

This workshop aims to demonstrate the needs and realisation of long term, big data monitoring of the biodiversity, by leveraging advances in IoT, versatil microcontrollers, advanced signal processing and machine learning. Continuous monitoring of ecosystems can be achieved by recording and analysing their acoustic environment (soundscape), which is the expression of the habitat quality, richness and biodiversity. Managing big acoustic data streams requires specialized tools to classify the scenes and detect / recognise the different components, e.g. biophony, geophony and anthropophony. This second edition will be devoted to model and applications on mammals.

Proceedings are aimed to be published jointly with the first workshop. **Free Registration is required before 10th nov.** To register please contact [glotin@univ-tln.fr](mailto:glotin@univ-tln.fr) , subject = "EADM"

## **Program**

*9h Welcome*

### **9:15 Opening & objectives**

“ Data Science and bioacoustics of Biosonar & Songs of marine mammals ”  
Hervé Glotin, LIS CNRS U. Toulon

### **9:30 Case studies, overview**

“ Marine soundscapes, to broaden the scope of underwater acoustic monitoring “  
Gianni Pavan, CIBRA, univ Pavia, Italy

“ Acoustic monitoring in Pelagos sanctuary ”  
Marion Peirache, Parc national de Port-Cros & Pelagos, France

“ Caribbean survey of marine mammals ”  
Jeffrey Bernus, Scientific resp. of CARIMAM, AGOA & AFB, Martinique

10:30 - 10:45 Coffee break

“ ACCOBAMS addressing underwater noise issues ”  
Maÿlis Salivas, Accobams, Monaco

### **11:05 Emb. PAM on Autonomous Surface Vehicle completed by satellite for large scale survey**

“ Sphyrna : an oceanic big data scientific Autonomous Surface Vehicle ”  
Fabien de Varenne, Seaproven SA

“ Passive acoustic 3D tracking of deep cetacean diver from the Sphyrna ASV “  
Marion Poupard et al., Biosong SA

12:30 lunch - 14:00

“ High Velocity acquisition : JASON sound card, 3D Tracking of Biosonar of pink Amazon River dolphins into the wild ”  
Valentin Barchasz et al., SMIoT

### **14:20 Deep Learning for detection and Classification**

“ Bird Species Identification from Audio Recordings and Metadata “  
Jan Schlüter et al., LIS CNRS & OFAI Austria

“ Towards Deepnet AutoEncoder - application to Biosonar of Marine Mammal ”  
Maxence Ferrari et al., DGA LIS LAMFA

“ Deep learning and satellite images, perspective on whale survey “  
Adeline Paiement, LIS & Bristol univ.

15:20 15:40 Coffee break

### **15:40 Detectop, Pattern analysis and inversion**

“ Mathematical model for long term analysis of the frequency of songs of Blue or Humpback whales “  
Julie Patris, Franck Malige, et al. STIC AmSud BRILAM, Chili (visio)

“ Analysing Weeks of Underwater Sound in Hours: Preliminary Results “  
Jan Schlüter et al., LIS CNRS & OFAI Austria

### **16:10 Discussion**

*17:00 Closing*

# Organisation

Glotin, Ferrari, Schlüter, Paiement

Pôle INPS UTLN & GDR CNRS MADICS EADM & STICAMSUD BRILAAM

Contact / info : [glotin@univ-tln.fr](mailto:glotin@univ-tln.fr)

## Venue

TGV Toulon, Airport Toulon, Campus La Garde, <http://www.univ-tln.fr> (map below). The conference room is M001, floor of bt SeaTech - M (SeaTech is in X and M. M is the building at the East). Entrance by car = West (Ouest), M is on the LEFT, 50m down. It is easy to park (free) near the building.



Pour accéder au campus de La Garde :

### Entrée Nord et Ouest

Venant de Toulon : prendre la **sortie 5B Université** puis suivre les flèches de direction routières

Venant d'Hyères : prendre la **sortie 5 La Bigue - Université** puis suivre les flèches de direction routières

### Entrée Sud

Venant d'Hyères : Prendre la route D29, direction La Garde

Venant de La Garde : Prendre l'avenue du Premier-Bataillon-d'Infanterie-de-Marine et du Pac.

Past edition 2017 :

<https://docs.google.com/document/d/1FCidx-RcB8RyExRvhvFN1InIC2I-8ZVgnaLRt4QfwfM/edit>



*Some of the attendees of the workshop (1st day): from left to right: O. Gerard, G. Pavan, H. Goeau, K. Rukmangada, S. Clemente, R. Righini, J. Ricard, V. Roger, R. Balestrierio, R. Marxer, D.Prokhorenkov, G. Arnold, M. Fourniol, H. Barthelemy, H. Glotin, T. Lengagne, M. Poupard, T. Soriano, M. Ferrari, V. Gies, A. Bougrain-Dubourg, V. Barchasz, D. Cazeau, V. Rocher, M. Monakhova, C. Audoly, S. Paris, Y. Bas, P. Arlotto. 10 others were outside... or visited only the second day.*