

L'Animation Scientifique



> JEUDI 21 JUIN 2018, 13h15 \ 14h00 à SÈTE

Processing of acceleration and dive data on-board satellite relay data tags to investigate behaviours of free-ranging marine predators

Biologging technologies are changing the way in which the marine environment is observed and monitored. However, because device retrieval is typically required to access the high resolution data they collect, their use is generally restricted to those animals that predictably return to land. Data abstraction and transmission techniques aim to address this, although currently these are limited in scope and do not incorporate, for example, acceleration measurements which can quantify animal behaviours and movement patterns over fine-scales. In this study, we present a new method for the collection, abstraction and transmission of accelerometer data from free-ranging marine predators via the Argos satellite system. We test run the technique on 20 juvenile southern elephant seals *Mirounga leonina* from the Kerguelen Islands during their first months at sea following weaning. Using retrieved archival data from nine individuals that returned to the colony, we compare and validate abstracted transmissions against outputs from established accelerometer processing procedures. Abstracted transmissions included estimates, across five segments of a dive profile, of time spent in prey catch attempt (PrCA) behaviours, swimming effort and pitch. These were then summarised and compared to archival outputs across three dive phases: descent, bottom and ascent. Correlations between the two datasets were variable but generally good (dependent on dive phase, marginal R^2 values of between 0.45 and 0.6 to > 0.9) and consistent between individuals. Transmitted estimates of PrCA behaviours and swimming effort were positively biased to those from archival processing. Data from this study represents some of the first remotely transmitted quantifications from accelerometers. The methods presented and analysed can be used to provide novel insight toward the behaviours and movements of free-ranging marine predators, such as juvenile southern elephant seals, from whom logger retrieval is challenging. Future applications could however benefit from some adaptation, particularly to reduce positive bias in transmitted PrCA behaviours and swimming effort, for which this study provides useful insight.

par **Samantha Cox** Post-doc IRD UMR MARBEC, Sète

Salle Mont St-Clair, Station Ifremer, avenue Jean Monnet, Sète

UMR MARBEC (IRD, Ifremer, Université de Montpellier, CNRS) ☎ 04 99 57 32 50 - 04 67 14 47 32 \ www.umr-marbec.fr

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@ contacts

Claire.Saraux@ifremer.fr
sebastien.villegier@cnrs.fr
francois.guilhaumon@ird.fr
Vincent.Ouisse@ifremer.fr

> prochainement

28 juin à Sète :
Alberto Baudena (MNHN)