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Session 4

Unsupervised functional classification applied on high resolution oceanographic data in Canaries current large marine ecosystem: toward fine scale analysis

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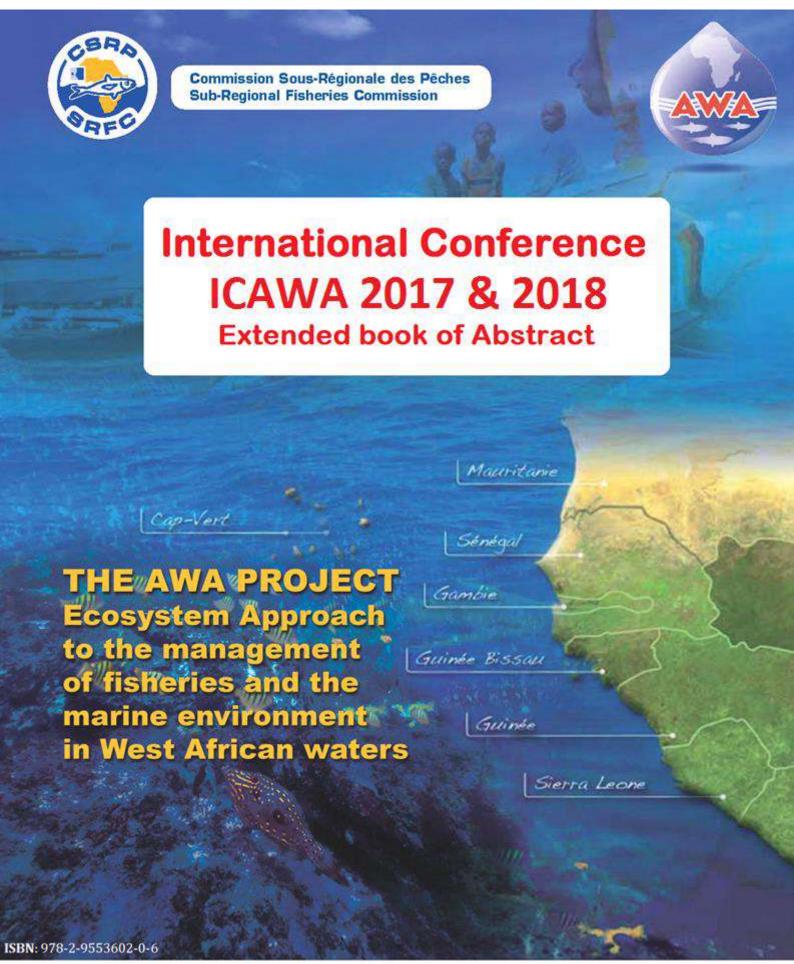[7]Instituto Nacional de Desenvolvimento das Pescas (INDP) and Ocean Science Centre Mindelo (OSCM), Mindelo, Sao Vincente, Cabo Verde
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Abstract

The understand of the fine scale process occurring in the ocean needs high resolution data and ad hoc analysis approach to improve the knowledge of ecosystem functioning. During an international survey carry out in 2014 'AWA' on-board the research vessel Thalassa (Ifremer, Brest) along the coast of Mauritania and Senegal we have used simultaneously multifrequency scientific echosounder and a Scanfish, both system allow a continuous acquisition of high- quality data at high spatial and temporal resolution over long distance. The functional data analyses have recently raising in serval field of statistics and appear to be well suited for the analysis of this dataset. In fact such data has spatial-functional nature and may be considered as observations of a stochastic process X in space of continuous functions over an interval T. Let X1(t), X2(t),.., Xn(t), t T, be the collection of n observations from X. First, we study an eventual horizontally or vertically variation of the acoustic intensity, we consider for a given frequency (here 200 kHz) and one vessel radial the two cases: vertical and horizontal variations of the acoustic intensity. Unsupervised functional classification used, shows a horizontal and vertical variation of acoustic intensity for a given frequency and a given radial. The approach can led to scrutinized at fine scale the processes occurring in three dimensions in the pelagic environment. The statistical functional classification applied to this case study appears powerful, ad hoc for ecological studies of marine ecosystem and will be extend to model the spatial structuration of the pelagic ecosystem according to the physcio-chemical parameters of the water mass which will allow to improve the forecast of the effect of the environment on marine ecosystem organization.

International Conference ICAWA 2017 & 2018
Extended book of Abstract

THE AWA PROJECT
**Ecosystem Approach
to the management
of fisheries and the
marine environment
in West African waters**

Mauritanie

Cap-Vert

Sénégal

Gambie

Guinée Bissau

Guinée

Sierra Leone

Trilateral German-French-African research initiative

The both last ICAWA edition, 2017 and 2018, was done as a joint event with other closely related meeting. In 2017 with the inauguration of the OSCM in Cabo Verde underlining AWA cooperation with INDP and UNICV as well as Geomar and collaborators. In 2018 ICAWA was join to Preface final meeting following the memorandum of understanding signed a couples of years before between the two consortium and which have led at the end to a common policy session followed by the redaction of a policy brief taking advantage of the results of the both projects. Some abstract aside ICAWA joint session are missing see the orgniser to get more information.

Sponsors ICAWA 2017 and IACAWA 2018

These two edition of ICAWA were joint with OSCM inauguration and the final meeting of the European preface project, respectively in 2017 and 2018.

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Book of abstract and recommendations

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Poster presentation