



Matecho: an open-source tool for processing fisheries acoustics data to facilitate collaborative development

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Abstract

Matecho is a free, open-source and automated processing method to extract information and perform echo-integration and fish shoal extraction from various echo sounder sources providing digital acoustic data on fisheries and aquatic ecosystem. The open-source initiative helps foster collaboration and technological transfer. Matecho supports various formats, such as the international standard format for the exchange of fisheries acoustics raw and edited data. The procedure allows the cleaning of semi-automatic echogram data and the application of automatic data filters, *i.e.*, transient noise, attenuated signal and impulsive noise removal and background noise reduction. Echo-integration processing is executed for each depth layer and integrates their characteristics per elementary sampling unit. Scattered layers are automatically detected by segmentation from the echo-integrated echogram, and shoals are extracted according to an iterative process of aggregation of filtered echogram echoes that allows, in both cases, the calculation of the *ad hoc* parameters describing morphological, spatial location and acoustic characteristics of scattered layers and shoals. Matecho is open-source software for researchers and provides end-users with a user-friendly, free executable program.

Keywords: echo-integration, fisheries acoustics, software, open access, Movies 3D, Matecho.



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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.

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