

DISPAR: A TOOL TO MODEL BOTTOM TRAWL FISHING GEARS

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DISPAR is a collaboration project between the UPC-CTVG and the CSIC-CMIMA aimed at understanding and analyzing the behaviour of bottom trawl fishing gears (PETRI project "Optimizació informàtica para el diseno, construcción y prueba de artes de pesca de arrastre" PTR1995-0735-OP). DISPAR includes a simulation module and a user-friendly interface software. The numerical simulation provides global information relative to the bottom trawl gear for at affordable costs (these details can be found in the paper "Simulation of bottom trawl fishing gears. A simplified physical model" by A. Folch, J. Prat, J. Antonijuan, A. Manuel, A. Sala and F. Sardà, accepted for publication at the book of IMAM07 meeting, edited by Taylor and Francis co.). DISPAR goes beyond simply simulating fishing trawl gear and allows the visualization of the effects of certain trawl gear characteristics such as warp length, sweep length, weight or dimensions of the otterboards. Relevant outcomes are the horizontal otterboard opening, the angle of attack, the warp geometry and the distribution of tensions under different fishing conditions such as fishing depth or towing speed. The simulation module is interfaced in order to facilitate data inputs and visualize the results for the final user.

The user has to follow two steps to complete any one simulation; the first is to select a trawl gear. The corresponding screens involved in

this step are:

- Screen to select a net. Currently, it is possible to select from 3 different size nets types typical of those used along the Catalan coast (demersal and pelagic). It is possible to vary the sweep and bridle length (see Figure 1).
- Screen to select a door. Doors of different types can be chosen from MAPSA SL (www.mapsasl.com). In addition, the user can select the attachment point of the warp at the door and can also add additional weight.
- Screen to select general parameter, including towing speed, warp characteristics, sea depth and seabed type.

At the second step DISPAR simulates the trawl gear and shows these results through the following screens:

- Screen with a global 3D configuration of the trawl gear with different perspectives. In addition to this feature, it also has warning messages.
- Screen showing horizontal opening otterboards, the attack angle and distributions of the tensions on different components of the trawl gear (see Figure 2).

The end product is a multifunctional aid tool that complements data measurements, helps fishermen and is also a useful teaching aid.

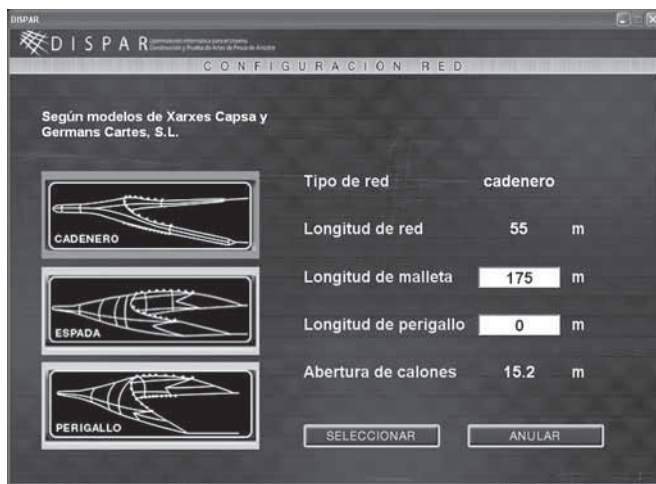


Figure 1

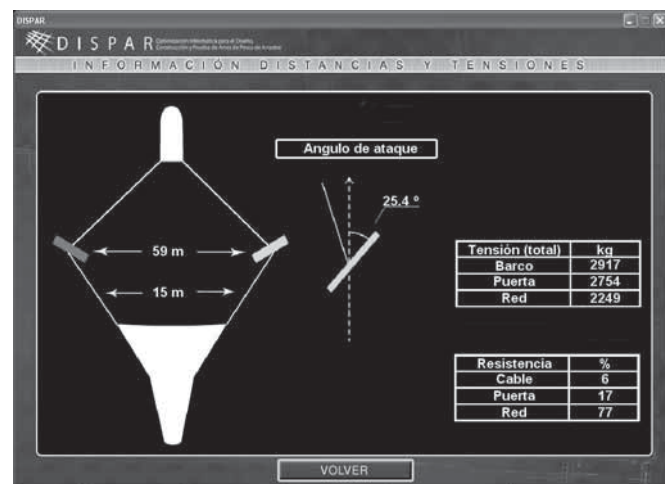


Figure 2

