MODELLING PHYSICAL-BIOLOGICAL INTERACTIONS IN THE DYNAMICS OF THE ADRIATIC SARDINE ICTHYOPLANKTON

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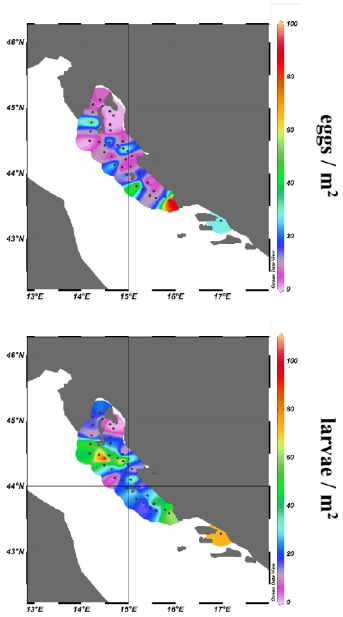
INTRODUCTION

Investigations of the spawning grounds of the commercially important fish species play an important role in upgrading purse seine fisheries regulation and accompanied protection measures. In order to fill some gaps in the knowledge of the spawning ecology in the Adriatic, a series of numerical experiments with coupled modelling system ROMS-ICHTHYOP was conducted. ICHTHYOP is an individual-based model (IBM) desvigned to study the dynamics of fish eggs and larvae (Lett et al., 2008). In our numerical simulations ICHTHYOP model was initialized using published investigations of the Adriatic sardine, which provided necessary information such as spawning and recruitment areas, initial ichthyoplankton lengths and stages, dependence of their growth and stage changes or temperature, lethal temperatures etc.

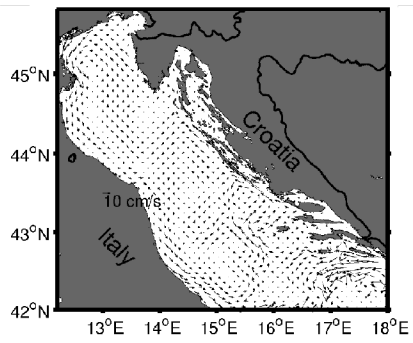
MEASUREMENTS



ROMS SETUP AND PRELIMINARY RESULTS

Horizontal resolution: 2.5 km (108*320)
Vertical discretization: 22 S-levels
Atmospheric forcing: Aladin (8 km), 3-hour interval

CURRENTS



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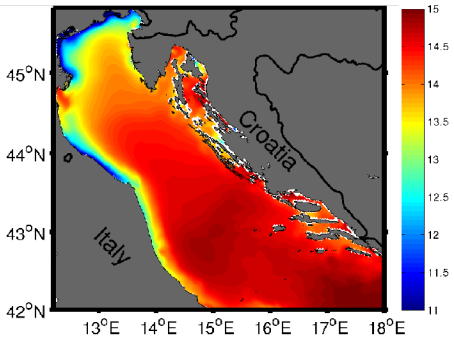
TEMPERATURE [°C]



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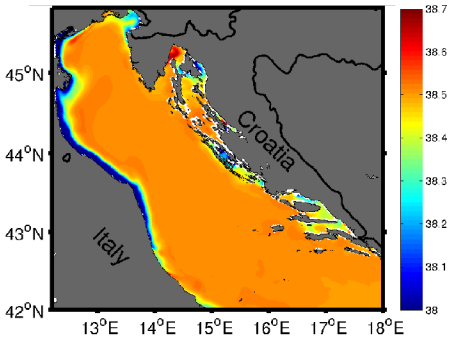
SALINITY



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LARVAE DISTRIBUTION

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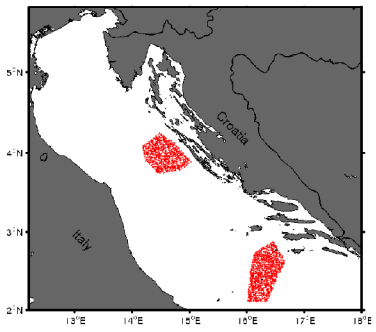

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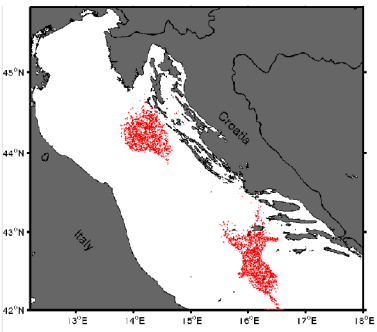

31 JANUARY 2013