INTRODUCTION

San Matías Gulf (SMG) presents several environmental scenarios generated by the physical, weather and topography conditions (Piola & Scasso, 1988, Gagliardini & Rivas, 2004; Williams et al., 2010, Pisoni, 2012). These scenarios influence the reproductive success of species through processes such as injection of nutrients (upwelling), aggregation and accumulation of food particles (stability of water column and coastal fronts) and retention of eggs and larvae (Bakun, 1996). The identification and characterization of these scenarios are essential to link environmental information and biological-fishery data. We have taken advantages of remote sensing and technological tools based on satellite services, as well as oceanographic cruises to improve our knowledge of the environmental variables in relation to biological resources in the gulf, identifying the patterns of species distribution in relation to environmental and oceanographic phenomena (Williams et al., 2010, Ocampo-Reinaldo et al., 2013, Romero et al., 2013).

Two oceanographic cruises were carried out in San Matías Gulf (SMG), in the north of the Argentine Patagonian Continental Shelf (between 40°14’ S and 42°13’ S) in the context of the first surveys in the study zone under the SAC-D/Aquarius mission. The aim of this work is to present temperature in-situ records obtained in the mentioned cruises and compare them with temperature estimates by the NSLST-MODIS algorithm.

We propose the use of NSRST data from SAC-D/Aquarius mission for supporting research in fisheries and ecosystem management in SMG. The ability to access NSRST data will allow us to have higher spatial detail of oceanographic processes in SMG. Also the results presented in this work show part of our experience in the use of infrared remote sensing data in order to consider it as a basis for future comparisons involving NSRST data.

RESULTS

The profiles of temperature in January, (Fig. 3) show a strong vertical stratification in the northern sector of SMG (ES). The profiles of the southern and southwest sectors (E7 and E10) show lower stratifications while in the adjacent shelf (E1) the water column is mixed.

Match-up results showed good fit and statistical significance (P < 0.05) (Table 2), however the mean differences between satellite and in-situ data for the second cruise were higher than in the first one (Table 2).

The ability to obtain in-depth temperature records allowed to observe the vertical structure of the water column in different sectors of the gulf and perpendicular to the thermal front identified and characterized by different authors (Piola and Scasso, 1988, Gagliardini and Rivas, 2004, Williams et al 2010, Pisoni, 2012).

The results of this study show that MODIS sensor can be used to analyze spatio-temporal patterns in SMG despite the overestimation of the algorithm.

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