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S10-P5

Buoyancy and vertical distribution of Pacific Mackerel eggs and larvae and its climate change implication for the temporal variability of recruitment

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Vertical distribution of fish eggs and larvae is a crucial component for determining advection and recruitment variability. Little has been reported about the vertical location of Pacific mackerel *Scomber japonicus* eggs and larvae in Korean waters. Therefore, we measured the specific gravity of eggs and larvae using artificially fertilized eggs, and then simulated its vertical distribution to understand the distribution patterns in the spawning area around Jeju Island, Korea. All eggs were spawned from by raising broodfish (May-June 2013 and 2014), and the specific gravity of eggs and larvae was measured by density-gradient column (Martin In. Co. LTD). The egg specific gravity during the early stage ranged from 1.203-1.0211. In general, the fertilized egg showed a gradual decline in specified gravity until full development of the main organs, with a sudden increase just before hatching. However, specific gravity of larvae tended to increase with diel pattern from 4 to 16 days after hatching. Due to the different salinity in spawning area, the vertical location of eggs and larvae should be different interannually, which determines the various levels of advection as well as recruitment success.

S10-P6

The Brazilian sardine (*Sardinella brasiliensis*) landings and its relationship with the marine variability in the Southeast Brazilian Bight (SBB)

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This work presents an analysis of the influence of the marine climatic variability on the monthly catching of the *Sardinella brasiliensis*, in the Southeast Brazilian Bight (SBB) between 1990 and 2014. Remote Sensing data was used to obtain time series of Sea Surface Temperature and Chlorophyll *a* anomalies. In order to evaluate the relationship between these variables the methods of wavelets, cross-wavelets and cross-correlation were applied. The results show that the SSTA positive values are related to a decrease in catching sardines, while negative values of SSTA that are associated with increased production. We note that in the study area the observed SSTA are predominantly positive from the year 2000 and may be influenced to reduce the amount of sardines landed. The maximum and minimum values of SSTA occurred mainly at the time of recruitment to the adult stock or the beginning of the spawning season of the Brazilian sardine. The cross-correlation between the production of sardines and the concentration of chlorophyll *a* showed two peaks, one at 7 and another 3.5 years. The peak years of the chlorophyll concentration to, for example, 2007, the production of sardine will be greater with a lag 1.5 to 2 years. Factors such as SST, wind, Ekman transport and concentration of chlorophyll *a* govern the abundance and distribution of the Brazilian sardine, as they determine the amount of food that will ensure successful reproduction and recruitment of this species. All aspects should be considered for obtaining a coherent and sustainable fishing policy.