



Comunicação oral - Quarta Sessão: Ecologia e conservação

Short-term and seasonal variability of sea surface salinity at the São Sebastião Channel (set/2014 – out/2018)

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Global changes influence the global water cycle, which implies in salinity changes, especially at the coastal oceans. Variation in nearshore salinity can favor the growth of certain species and even promote red tides. Therefore, it is important to observe and predict salinity variability. In the São Sebastião Channel (SSC), located at the north of São Paulo state, hydrodynamics are not substantially influenced by river runoffs. Seasonally, salinity is expected to be influenced by the warm and salty Tropical Water in autumn and winter, and the cold and less salty South Atlantic Central Water in spring and summer. In addition, the SSC receives a mix of local diffuse and variable remote continental runoff, characterized as the Coastal Water. The climate of this region is characterized by storms during summer and by the passage of strong cold-front systems during winter. Episodic but extreme low-salinity conditions are anticipated during summer as a result of intense precipitation. The objective of this study is to characterize the variation of salinity at the surface waters of the SSC using four years of hourly observations (Sep. 2014 to Oct. 2018) acquired from a moored buoy (SP-01) linked to the *Sistema de Monitoramento da Costa Brasileira* (www.simcosta.furg.br/), and investigate its relationship to the variation of sea surface temperature (SST), air temperature and precipitation volume and rate. We report the longest and continuously validated salinity time series at the SSC, showing median salinity values around 34.50 and a remarkable interannual variability. During 2015 and 2017, salinity tended to be stable year-round. Differently, low salinity values were registered throughout winter and spring of 2016 and also during February 2018, when precipitation rates appear to explain the low values of salinity (28.91). High precipitation volume was observed during winter of 2016 (44.57 mm), but rainfall events were rather episodic compared to the more protracted salinity drops, suggesting an important remote contribution of freshwater to the SSC. It is interesting to note that red tides were reported in the region during both low-salinity events, suggesting that continental outflows could be an important source of nutrients. These preliminary results highlight the challenges for understanding and predicting changes in salinity at the SSC. Nonetheless, extreme low salinity values may be strong proxies of changes in this environment.

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