Observing system for detecting climate-induced changes and extremes in the eastern part of the Gulf of Trieste along the Slovenian coast

DANIELA TURK[1], ŠPELA COLJA[1], SAŠO PETAN[1], MATJAŽ LIČER[1]

[1] *Slovenian Environment Agency, Slovenia*

Climate-induced changes in ocean dynamics and temperature have significant implications for coastal ocean inundation risks and biogeochemical processes, which are crucial for maintaining the health of marine ecosystems. These changes vary regionally and thus the comprehensive view of the changes happening in the region requires an interdisciplinary multi-platform regional observing system.

Here, we present long term time series of physical observations (sea level, sea surface temperature and salinity), combined with meteorological and hydrological data (river flow) in the eastern part of the Gulf of Trieste along the Slovenian coast. The aim is to examine the long-term impact of climate change on ocean dynamics, the associated frequency of extremes, and the correlation of these observations with climate indexes. Some observations are compared to regional models and remote sensing and consequences for biogeochemical processes are discussed.

This study underscores the significance of national (regional) observing systems in detecting climate changes in coastal oceans. Their contribution to global efforts such as the Global Ocean Observing System (GOOS), the United Nations Decade of Ocean Science for Sustainable Development and the World Ocean Assessment (WOA) is invaluable in our attempt to address climate change.