

Changes in Carbon dioxide concentration in the air and surface seawater of Osaka Bay

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Continuous measurement technique of CO₂ concentration in surface seawater which was easy to use in the coastal sea is developed and applied to elucidate long-term CO₂ dynamics in the coastal regions, where the short-term change is significant. Continuous measurements of salinity, pH and DO were conducted at two stations in Osaka Bay. The values of pCO₂ were calculated using the "CO₂SYS" by CDIAC that uses pH and total alkalinity. As a result, the measurement technique which we developed had enough accuracy, and it became clear that long-term data could be acquired. In summer and autumn, surface water CO₂ fluctuation had large diurnal change by photosynthesis, and atmospheric CO₂ is absorbed to sea water. In the winter when the stratification disappears, CO₂ in seawater is released to the atmosphere.

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