

## Spatial changes in form of nitrogen and biodegradability of organic matter in a river front zone

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Studying the transformation of terrestrial nutrient into organic matter and its biodegradability in coastal seas would assist the estimation of the transportation of those from the land to the ocean. In this study, field observations for investigating the spatial changes in form of nitrogen from dissolved inorganic nitrogen (DIN) discharged from Yodo River into particulate and dissolved organic nitrogen (PON, DON) in the river front zone were conducted from 2017 to 2019. The distribution of PON and DON in the entire Osaka Bay were also obtained by field observations from 2015 to 2016. The biodegradation experiments were conducted to estimate the biodegradability of PON and DON. The results of the field observations showed that DIN occupied only  $6 \pm 6$  % of total nitrogen (TN) at the river front, while TN in river water was dominated by DIN. The percentage of PON in organic nitrogen in brackish region was  $69 \pm 15$ %, and the distribution of PON in the entire bay area suggests that most of PON would be sinking or degraded within the bay. The results of the experiments showed that over 70% of DON in brackish region was refractory, and the distribution of total DON in the entire bay area suggests that most of DON would be transported toward the shelf sea.

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