

Water Engineering Area

Department of Civil Engineering, Division of Global Architecture, Graduate School of Engineering

<http://www.civil.eng.osaka-u.ac.jp/hyd/>

Introduction

We have researched on the area of hydroscience and hydraulic engineering. Our researches have centered on computational fluid mechanics and environmental analysis by field observation. Currently, our primary concerns are to analyze and simulate bio-geochemical process in enclosed waters and material cycles in their basins.

Research theme

A. Hydrodynamics, transport and management in river basins

- Elucidation of nutrient transport through groundwater and its impact on water environments of basins and coastal areas
- 3-D hydrodynamics and water quality simulation in urban tidal rivers

B. Modeling of coastal environments and ecosystems

- Survey and analysis of behavior of hypoxic water mass
- Quantification nutrient cycle and purification capacity in coastal shallow waters

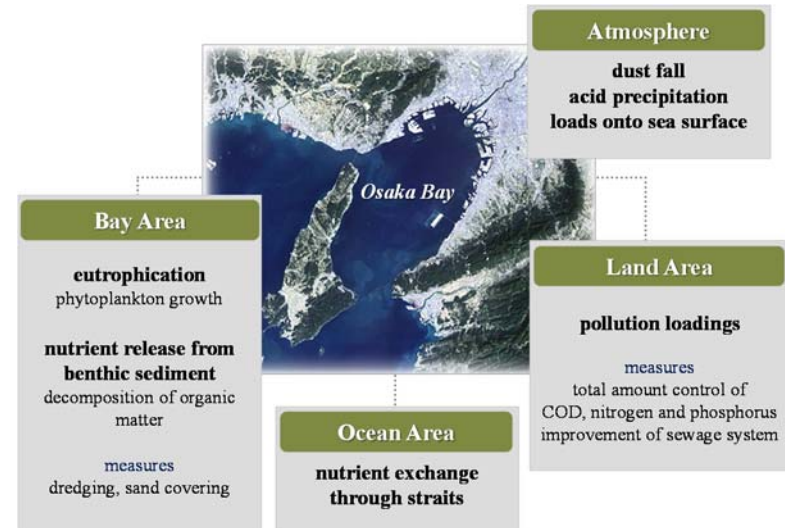
C. Development of integrated management system for coastal area

- Development of forecast system of current and water quality in coastal sea using data assimilation method
- Proposition of an effective environmental impact assessment

D. Proportion of Environmental measures for river basins

- Influence evaluation of natural and social surroundings on water environments in a river basin
- Development of economic–environmental coupled model using applied general equilibrium and water-quality models

Nutrient cycle related to coastal environment



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