


## Requests for Collaboration

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<p><b>Research Interests</b></p>	
<ul style="list-style-type: none"> <li>● Conservation and utilization of estuarine and coastal ecosystem</li> <li>● Numerical modelling of the ecosystem</li> <li>● Process elucidation and dynamics prediction of aquatic ecosystem</li> <li>● Climate change, water purification, and ecosystem recovery</li> </ul>	
<p><b>Creative Achievements in The Application of New and Existing Science and Technology</b></p>	
<p><b>(1) Ecosystem modeling:</b> Novel coastal ecosystem models including (a) the benthic-pelagic coupled ecosystem, (b) Carbon-Nitrogen-Phosphorus-Oxygen-Calcium cycling, (c) Food web system, (d) carbonate chemistry, (e) coupled with hydrodynamic model, were developed on the subjects of (a) ecosystem recovery, (b) climate change and (c) water purification (i.e., hypoxia, eutrophication).</p> <p><b>(2) Process elucidation and dynamics prediction:</b> The models revealed/suggested (a) the pattern and variability of the ecosystem (i.e. highly daily dynamics in the tidal-flat compared to seasonal dynamics, vertical micro profiles in the benthic system) (b) mechanisms and interactions (i.e., oxygen/consumption/production mechanisms in the benthic-pelagic systems, CO<sub>2</sub> air-ocean fluxes and their main causes, and ecological chain responses in the environmental deterioration spiral and improvement spiral.).</p> <p><b>(3) Planning and Management:</b> The models are now used as the communication platform among scientists and policymakers on the environmental planning and policy making towards conservation/utilization of coastal ecosystem.</p>	
<p><b>Technology (Product, Process, Device, Service etc.) That I Want to Request for Collaboration</b></p>	
<ul style="list-style-type: none"> <li>● <b>Numerical Ecosystem modeling</b> (process base or statistic base model, benthic and pelagic systems, shallow coastal area)</li> <li>● <b>A science-based communication platform</b> (contributes to the formulation of policies, plans and projects aimed at preserving and utilizing hydrosphere environment / ecosystem.)</li> </ul>	
<p><b>A List of 5 Key Publications</b></p>	
<p>[1] <b>Sohma, A.</b>, Shibuki, A., Nakajima, F., Kubo, A., Kuwae, T., 2018. Modeling a coastal ecosystem to estimate climate change mitigation and a model demonstration in Tokyo Bay. <i>Ecological Modelling</i>, 384, 261-289.</p> <p>[2] <b>Sohma, A.</b>, Sekiguchi, Y., Nakata, K., 2009. Application of an ecosystem model for environmental assessment of the reclamation and mitigation plans for seagrass beds in Atsumi Bay. <i>Estuarine, Coastal and Shelf Science</i>, 83(2), 133-147.</p> <p>[3] <b>Sohma, A.</b>, Sekiguchi, Y., Kuwae, T., Nakamura, Y., 2008. A benthic-pelagic coupled ecosystem model to estimate the hypoxic estuary including tidal flat-Model description and validation of seasonal/daily dynamics. <i>Ecological Modelling</i>, 215(1-3), 10-39.</p> <p>[4] <b>Sohma, A.</b>, Sekiguchi, Y., Nakata, K., 2004. Modeling and evaluating the ecosystem of sea-grass beds, shallow waters without sea-grass and an oxygen-depleted offshore area. <i>Journal of Marine Systems</i>, 45(3-4), 105-142.</p> <p>[5] <b>Sohma, A.</b>, Sekiguchi, Y., Yamada, H., Sato, T., Nakata, K., 2001. A new coastal marine ecosystem model study coupled with hydrodynamics and tidal flat ecosystem effect. <i>Marine Pollution Bulletin</i>, 43(7-12), 187-208.</p>	