

# Carbon transport through groundwater discharge in Kesenuma Bay, Japan

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Submarine groundwater discharge (SGD) is an important source of nutrients, trace metals, and carbon to coastal ecosystem. To quantify this processes in Kesenuma Bay, 24-hours mooring surveys for SGD tracers (Rn and Ra isotopes) and biogeochemical properties (nutrients, dissolved carbon and iron) were conducted during neap and spring tides in summer 2017. In this presentation, we will show results of simultaneous measurements of <sup>222</sup>Rn and pCO<sub>2</sub>. Although pCO<sub>2</sub> showed clear diurnal variation according to the photosynthesis/respiration process in both periods, excess CO<sub>2</sub> was supplied through significant groundwater discharge during the lowest tide in spring. These data will be used to quantify carbon flux from SGD and emission rate of CO<sub>2</sub> to atmosphere.

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