

---

[JJ] Evening Poster | A (Atmospheric and Hydrospheric Sciences) | A-CG Complex & General

## [A-CG43] Coastal Ecosystems - 2. Coral reefs, seagrass and macroalgal beds, and mangroves

convener: Toshihiro Miyajima (Marine Biogeochemistry Group, Division of Ocean-Earth System Science, Atmosphere and Ocean Research Institute, The University of Tokyo), Yu Umezawa (Tokyo University of Agriculture and Technology), Atsushi Watanabe (東京工業大学 環境・社会理工学院, 共同), Tomihiko Higuchi (Atmosphere and Ocean Research Institute, The University of Tokyo)

Thu. May 24, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

Coastal marine ecosystems are complex open system interacting with surrounding watersheds, outer ocean, and the atmosphere, providing a wealth of various ecosystem services to human life. Simultaneously, they are also influenced strongly and often negatively by human activities. This session, together with a companion session dedicated for the water cycle and land-ocean interactions [A-CG##], aims to provide a platform for interdisciplinary discussion covering various aspects of frontiers in coastal ecosystem sciences. This session particularly focuses shallow-water benthic communities ranging from temperate to tropical regions, such as coral reefs, seagrass and macroalgal beds, tidal wetlands, and mangroves. All these communities are characterized by intrinsically high primary production, active material cycling, and biodiversity hot spots. However, increasing human demand for coastal marine resources and industrial development concentrating on coastal regions incur the risk of rapid degradation and diminishment. Comprehensive assessment and monitoring of ecosystem functions and development of effective means for conservation and restoration are urgently needed for such communities. This session is dedicated to organizing and promoting such research and management activities by sharing state-of-the-art science and technology among ecologists, geologists, geochemists, biogeographers, etc. Field-based observational, experimental, and modeling studies concerning the following topics are especially welcome: ecosystem functions; elemental cycling; community connectivity; environmental changes such as global warming, ocean acidification, and sea-level rise; ecosystem services such as carbon sequestration, nutrient regulation, and fisheries production; regional- or global-scale comparison; long-term ecological researches.

---

## [ACG43-P01] Variation of stable isotope in soft tissue of scleractinian corals collected from Temperate zone in Japan

\*Tomihiko Higuchi<sup>1</sup>, Hiroyuki Fujimura<sup>2</sup>, Kentaro Tanaka<sup>1</sup>, Shirai Kotaro<sup>1</sup>, Sylvain Agostitni<sup>3</sup> (1. Atmosphere and Ocean Research Institute, The University of Tokyo, 2. Faculty of Science, University of the Ryukyus, 3. Shimoda Marine Research Center, University of Tsukuba)

Coral is dependent on particulate organic matter in seawater such as plankton and organic matter produced by photosynthesis by brown worms as nutrient sources. However, we do not know much about the seasonal variation of nutritional dependence, such as how much it changes depending on water temperature and light intensity. Carbon isotopic ratios ( $\delta^{13}\text{C}$ ) and nitrogen isotopic ratios ( $\delta^{15}\text{N}$ ) have been used as key indicators in estimating the nutrients of living organisms. Sulfur isotopic ratio ( $\delta^{34}\text{S}$ ) also has small separation between trophic levels and is applied as a useful bait origin estimation technique. In this study, we studied seasonal fluctuation of temperate coral nutrient source using stable isotopic ratio as index.