[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

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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-P07]Carbonate production rate estimated based on both the biological calcification and the carbonate chemistry change of seawater in an isolated reef: its controlling factors

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Keywords:carbonate production, carbonate system, coral reef, calcification rate, unmanned aerial vehicle

Coral reefs are formed by calcareous organisms, mainly scleractinian corals in tropical and subtropical coasts. Coral reefs play important roles in coastal protection by reducing wave energy. Healthy coral reefs have a potential to keep up with sea level rise and maintain reef structures. However, multiple local and global stressors degrade coral reef ecosystems and threaten their ecosystem functions. To predict whether coral reefs can keep up with contemporary see level rise, it is important to estimate reef carbonate production rate and its controlling factors. However, the method for carbonate production rate has not yet been well-established. In this study, we estimated reef carbonate production

rate based on both the biological calcification and the carbonate chemistry change of seawater and we then analyzed their controlling factors.