

International Conference on

Coastal Zones

May 16-18, 2016 Osaka, Japan

Continental-oceanic mutual interaction via material transport

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To promote discussion on mutual interaction between Continental and Oceanic zone, we have organized series of scientific session entitled as “Continental-Oceanic Mutual Interaction: Global-scale Material Circulation through River Runoff” since 2009 at Japan Geoscience Union (JpGU) annual meeting. Discharge from Continental-scale river basin is influenced by the fluctuation of SST from surrounding ocean. For river basin in South-American continent, it is well known that there are correlations between Discharge in Amazon River Basin and ENSO, together with Northern/Southern Tropical Atlantic Cold. In this survey, we are focusing on relationship with ENSO and IOD based on the hypotheses found in Chan et al. (2008). By analyzing correlation between precipitation data and IOD mode in the region there are some evidences that indicate relationship. Based on that approach, we made comparison with long-term observed discharge. It is found that discharge in Amazon basin are widely affected and influenced from those surrounding SST together with IOD in long distance. We also address importance of promoting Continental-Oceanic mutual monitoring focusing exclusively during extreme events. Through the observation by Yamashiki et al. (2014), it was prevailed that most of the contaminated material is discharged into the ocean during extreme weather events. The storm-mobilised radiocesium released into the pacific ocean from Abukuma Basin, the largest river system affected by fallout from the FDNPP, was an estimated 6.18 Terabecquerels corresponding to 61.4% of the total load delivered to the coastal zone during nearly-annual observation period. Future projection has also made by Adhiraga et al. (2015) introducing long-term impact on surrounding ocean.

Biography

Yosuke Alexandre Yamashiki has completed PhD in Kyoto University in 1999, then he worked at UNEP-DTIE-IETC as an Associate Programme Officer from 1999-2001, contributing to the establishment of La Plata River Basin Environmental Management Network (RIGA) and the 3rd La Plata River Basin Workshop. He joined Kyoto University since 2008, where he received the Best Paper Award in 2014 for his research in monitoring of environmental radioactivity through the Japan Society of Hydrology and Water Resources. In July 2015, he was nominated as Chairperson of the UNESCO-IHP International Initiative of Water Quality (IIWQ) Experts Advisory Group for the next 2 years.

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