Japan Geoscience Union Meeting 2012
(May 20-25 2012 at Makuhari, Chiba, Japan)

AHW26-P08 Room:Convention Hall Time:May 24 17:15-18:30

The influence of the Ganges, Brahmaputra river, and Meghna river on global carbon cycle

MANAKA, Takuya[1*], USHIE, Hiroyuki[1], ARAOKA, Daisuke[1], HIGASHI, Kengo[1], YOSHIMURA, Toshihiro[1], SUZUKI, Atsushi[2], H. M. Zakir Hossain[3], Hodaka Kawahata[1]

[1]The University of Tokyo, [2]Advanced Industrial Science and Technology (AIST), [3]Jessore Science and Technology University

In the perspective of global biogeochemical cycles, continental rivers are important paths transporting vast amounts of solids and solutes from land to ocean. However these rivers are not just pathways to ocean. There are various chemical reactions occurring in river water, e.g. respiration and photosynthesis. These reactions can alter chemical character of rive water and play some parts in global carbon cycle. In this study, we investigated three continental rivers in Bangladesh: the Ganges, Brahmaputra river, and Meghna river. We measured pH, total alkalinity, pCO_2, nutrients, and major ions in the river water. In these rivers, pCO_2 values were higher than the atmospheric level, which indicates that the river water works as a source of CO_2 to the atmosphere. Respiration and photosynthesis rather than weathering may play an important part in the river flow. We evaluated how continental rivers themselves affect global carbon cycle.

Keywords: respiration, photosynthesis, pCO2, river, limnology, carbon cycle