[JJ] Evening Poster | M (Multidisciplinary and Interdisciplinary) | M-IS Intersection

[M-IS14]Biogeochemistry

convener:Keisuke Koba(Center for Ecological Research, Kyoto University), Hideaki Shibata(Field Science Center fot Northern Biosphere, Hokkaido University), Naohiko Ohkouchi(海洋研究開発機構, 共同), Youhei Yamashita(Faculty of Environmental Earth Science, Hokkaido University)
Wed. May 23, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)
Biogeochemistry is an interdisciplinary study field including ecology, geochemistry, oceanography, limnology, hydrology, soil science and environmental sciences. Respective researches have tended to be conducted separately so far. This session aims to provide a common platform for biogeochemists of different disciplines, which facilitates the interactive discussion and information exchanges for further development of biogeochemical studies.

[MIS14-P05]Statistical analysis in nitrate concentrations of the rivers facing the Sea of Japan and the East China Sea: a comparison of 1980s and 2000s

*Ryosuke Ban[1], Ryo Sugimoto[2] (1.HOKKAIDO UNIVERSITY, 2.FUKUI PREFECTURAL UNIVERSITY)

Transboundary air pollutants from the East Asia to Japan are serious environmental issue. In particular, atmospheric nitrogen deposition onto the forested watershed facing the Sea of Japan and the East China Sea is provoking nitrogen saturation of forest ecosystems. However, the reports concerning the increase of NO_3^- concentration in these areas are limited to only a few rivers. Possible reason of this poor repots may be due to the complexity and heterogeneity of the watersheds. To elucidate the overviews of the trends of riverine NO_3^- concentrations in these areas, we have compared NO_3^- concentrations at the downsite of 39 rivers in the last two decades (1980s and 2000s). As a result, significant increases of NO_3^- concentrations were found from 15 rivers. Secondary, in order to identify important factors that affect an increase of NO_3^- concentration, we have constructed the generalized linear model. Best model showed that paddy field, altitude and catchment area are presumed to be negative factors, but population density and atmospheric N deposition are positive ones. This model means that paddy fields play role in not a source but a sink, possibly due to denitrification within the paddy. Additional principal component analysis and cluster analysis revealed features of each river. In rivers with large catchment area, the increase of NO_3^-concentration due to atmospheric N deposition may be suppressed by decrease of population density and paddy fields. On the contrary, atmospheric N deposition onto the river with small catchment area are likely to stimulate an increase of NO_3^- concentration.