

Control ID: 39516**Final ID:****Submitted On:** June 5th 2017 1:53:32 AM**SESSION TRACK:** Integrated Environmental Assessment and Management**REQUESTED SESSION:** Integrated Understanding of Biogeochemical Cycling of Mercury around Ocean Environmen... [Noriyuki Suzuki]**REVIEWER COMMENTS:**

Noriyuki Suzuki: [No Comments]

Kohji Marumoto: [No Comments]

REVIEWER RECOMMENDATIONS:

Noriyuki Suzuki: [No Recommendation]

Kohji Marumoto: [No Recommendation]

REQUESTED PRESENTATION TYPE: Platform**Student Presentation Award:****TITLE:** Mercury distribution in seawaters, planktons and fishes collected from the Kuroshio Current region of the East China Sea**AUTHORS/INSTITUTIONS:** Kohji Marumoto, National Institute for Minamata Disease / Environmental Chemistry Section; Akinori Takeuchi, National Institute for Environmental Studies / Center for Environmental Measurement and Analysis; Noriyuki Suzuki, National Institute for Environmental Studies / Center for Health and Environmental Risk Research**PRESENTER (E-MAIL ONLY):** marumoto@nimd.go.jp**AGREE TO BE RECORDED:** TRUE

ABSTRACT BODY: We measured the total Hg and methyl Hg in seawaters, planktons and fishes collected from the Kuroshio Current region of the East China Sea for evaluating Hg distribution and bioaccumulation in the sea area. This is because the East China Sea is the adjacent sea area of the Asian Continent which has been recognized as the largest Hg emission source in the world. The total Hg concentrations in the deeper waters were higher than those in surface and subsurface waters. On the other hand, the methyl Hg concentrations were also higher in deeper waters than in surface waters, and the maximum concentrations were observed in the depth of 500 – 600 m at the several sites. The temperature – salinity diagram shows that North Pacific Intermediate Water (NPIW) flows in this depth. The highest methyl-Hg concentrations in the NPIW were observed in the other sea areas such as the eastern Pacific Ocean and Equatorial regions. Therefore, it is possible that the horizontal advection of NPIW relates to high methyl Hg concentrations at the study area. From the results of the total Hg concentration in subsurface waters (~200 m) and planktons which were collected using a plankton net with 100 μm of mesh size, the bio concentration factors (BCFs) were calculated at 4.65 - 6.15. Although these values were almost equal with the reported values in other sea areas, they indicated that the total Hg in seawater was concentrated into the planktons from ten thousand to a few millions fold. In addition, we also measured nitrogen isotope ratios in the planktons and fishes and calculated the trophic magnification slopes (TMSs) of total Hg. The TMSs of total Hg in the Kuroshio Current region were slightly lower than those in other sea areas. Thus, the bio accumulation of total Hg between planktons and fishes were not remarkable in the study area. The BCFs and TMSs of methyl Hg will be also calculated and discussed in our presentation. This research was supported by the Environment Research and Technology Development Fund (5-1405) and (5-1702) of the Ministry of the Environment, Japan.

KEYWORDS: Bioaccumulation, Metals, Monitoring