## Significance of Coexistence of Land and Ocean in the Earth's Climate: Sciences Promoted at "Maritime Continent COE"

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An international center of tropical climatology, meteorology and oceanography, called "Maritime Continent COE" (MCCOE) is being constructed in Jakarta, Indonesia. This project is started by a Japanese ODA scheme in this year (2010) and will be supported fully by the Indonesian government after completion in 2014. The MCCOE have three functions: (i) an observation center maintaining/operating radar (HARIMAU) and buoy (TOCS) networks, (ii) a data center extended from the domestic data integration facility (NEONET), and (iii) a research center promoting advanced sciences with international visitors mainly using observational networks.

The earth has been keeping the land-ocean ratio for the recent 400 M years, in spite of plate tectonics. The geographical location of MCCOE is quite suitable to study the significance of coexistence of land and ocean on the earth's climate. The land-ocean contrast of heat capacity toward the solar radiation produces seasonal (monsoonal) and diurnal (sea-land breeze-like) variations. The longest coastlines along many large islands generate the earth's largest rainfall there through the diurnal cycle. Such significance is not so clear in the polar regions where both land and ocean covered by ice, and disappears completely in the other actual planets, as well as in an idealistic 'aqua planet' only with intraseasonal variations. Generation of interannual variations (ENSO and IOD) by ocean-atmosphere interactions also needs coastlines. These studies contribute to assessment of both domestic and global climate changes.