

A new scientific scheme to promote social/academic benefits:

Hydrometeorological ARray for Isv-Monsoon

AUtomonitoring (HARIMAU)

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The earth's global environment is the result of 4.5 billion-year history of interactions among the earth's surface, oceans, lives and atmosphere. All larger planets have atmospheres, but an ocean and an oxygen-rich atmosphere are known only on the earth even after planets out of the solar system have been discovered. In the ocean guarded from solar ultra-violet rays, organic materials were changed into lives, which led to the earth having the oxygen-rich atmosphere and the habitable land surface. We human beings appeared finally and spread over the lands, particularly in the east/south Asia (so-called "monsoon Asia") region with prominent seasonal variations. Therefore, to know climate changes and human-earth interactions in this special region is basic to understand the global environment, but there are still many areas out of observational coverage.

The human beings are lives doing sciences, which have been developed and expanded based on two motivations: intellectual/academic curiosity and survival/social benefit. In Asia population and economic capacity are approaching to the upper limit, and any scientific activities including climatological observations are requested to contribute not only to the science but also to the society. Since how the studies are promoted is equivalent to how the scientists and their institutions are surviving, two categories of institutions, the universities for small/basic sciences and the national institutes for big/applied sciences, must be coexistent with each other and the scientists may hold posts at the both categories.

At such a turning point of the history of the earth and the human beings, several observational projects for climate changes are being carried out. As an example, the radar network construction (the HARIMAU project) over the "maritime continent" (Indonesian Archipelago and surroundings) is introduced. Five radar stations are installed during 2006–8, and their data are displayed on the internet in real time. As a scientific result, on one hand, the reason why the earth's cloud activity is most active in the maritime continent is clarified as that a diurnal-cycle temperature/wind variation near the coastline is most effective to generate clouds in the equatorial region and the coastline is much longer in the maritime continent rather than in true continents. On the other hand, assessment and reduction of flood disasters having made millions of suffers every year are also successfully promoted, and such contribution of HARIMAU

project has been nominated as an early achievement of the Global Earth Observation System of Systems (GEOSS).