

GEWEX Monsoon Activity and plan for Pan-GEWEX monsoon activities

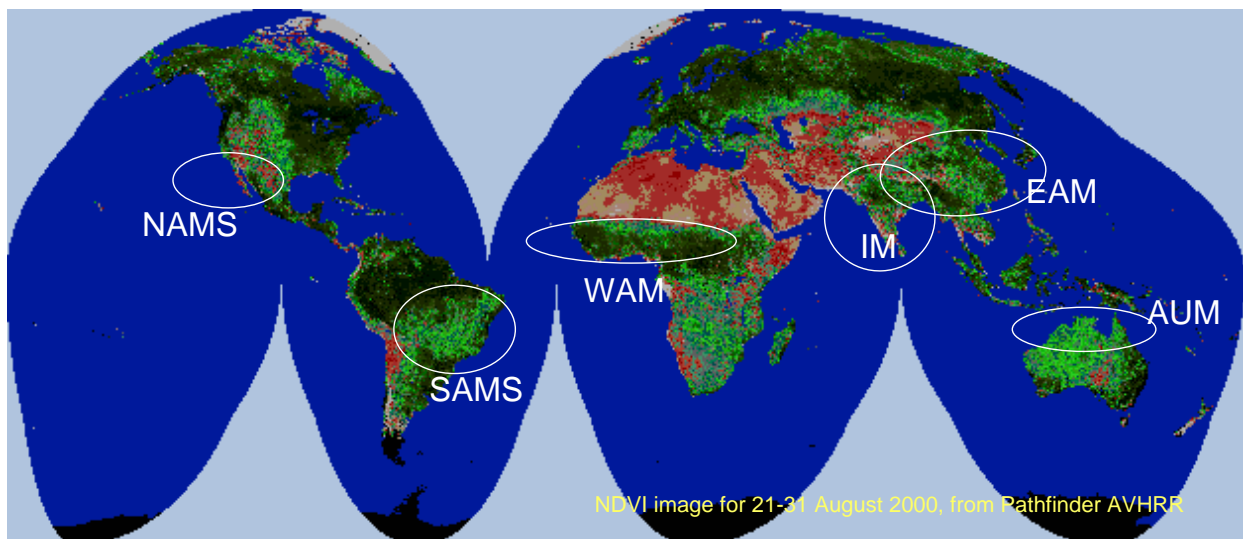
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Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

Institute of Observational Research for Global Change (IORGC)
GEWEX-SSG19 meeting, Honolulu, Hawaii

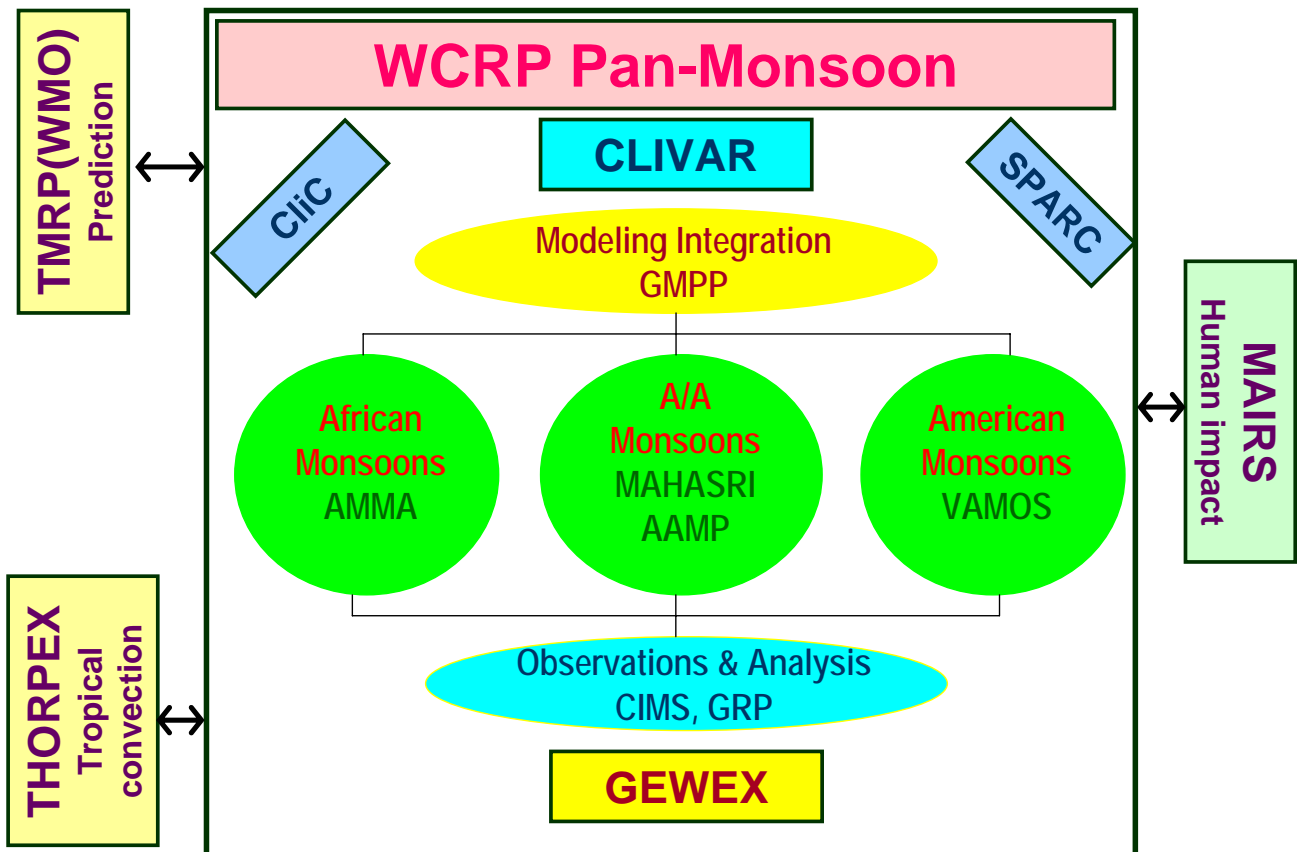
January 23, 2007

Major monsoons systems of the world



NDVI surface vegetation

WCRP Pan-Monsoon activities



New field observation plan

- Asian Monsoon Year (AMY)-2008 in collaboration with MAHASRI

Japan- JEPP, JAMSTEC/IORGC

China- 973AIPO

India- CTCZ

Australia etc. - SPICE

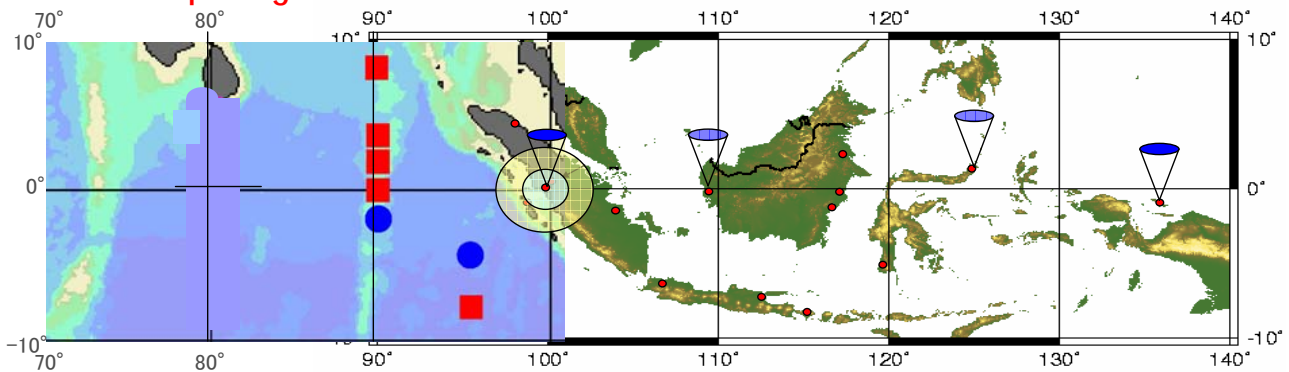
THORPEX-YOTC

Hydrometeorological Array for ISV-Monsoon Automonitoring (HARIMAU)

Japan EOS Promotion Program (JEPP)

Theme 2-1: Observation Network in Indian Ocean and Maritime Continent

Japan Agency for Marine-Earth Science and Technology (JAMSTEC)



Indian-Ocean Mooring Array

K. Mizuno (IORGC)

Buoy Observation

Y. Kuroda
(IORGC/MARITEC)

K. Ando (IORGC)
Y. Yamaguchi, Y. Ishihara
K. Matsumoto (MARITEC)

Data Analysis

Y. Masumoto
(IORGC/UTokyo)

H. Hase, I. Ueki
(IORGC)

Maritime-Continent Radar Network

M. D. Yamanaka (IORGC)

Radar Observation

H. Hashiguchi
(KyotoU)

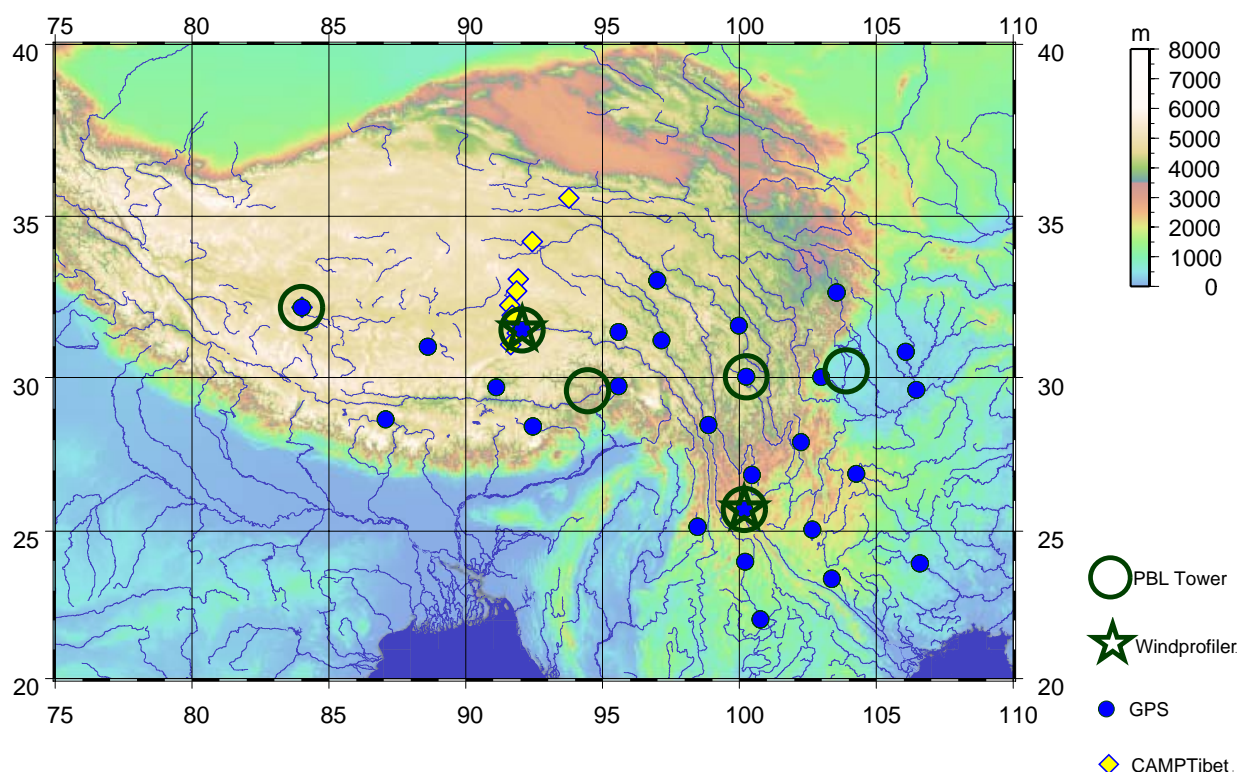
Y. Shibagaki (OsakaECU)
T. Shimomai (ShimaneU)
M. K. Yamamoto (KyotoU)
M. Kawashima, Y. Fujiyoshi
(Hokkaido U)
R. Shirooka, M. Katsumata
(IORGC)

Data Analysis

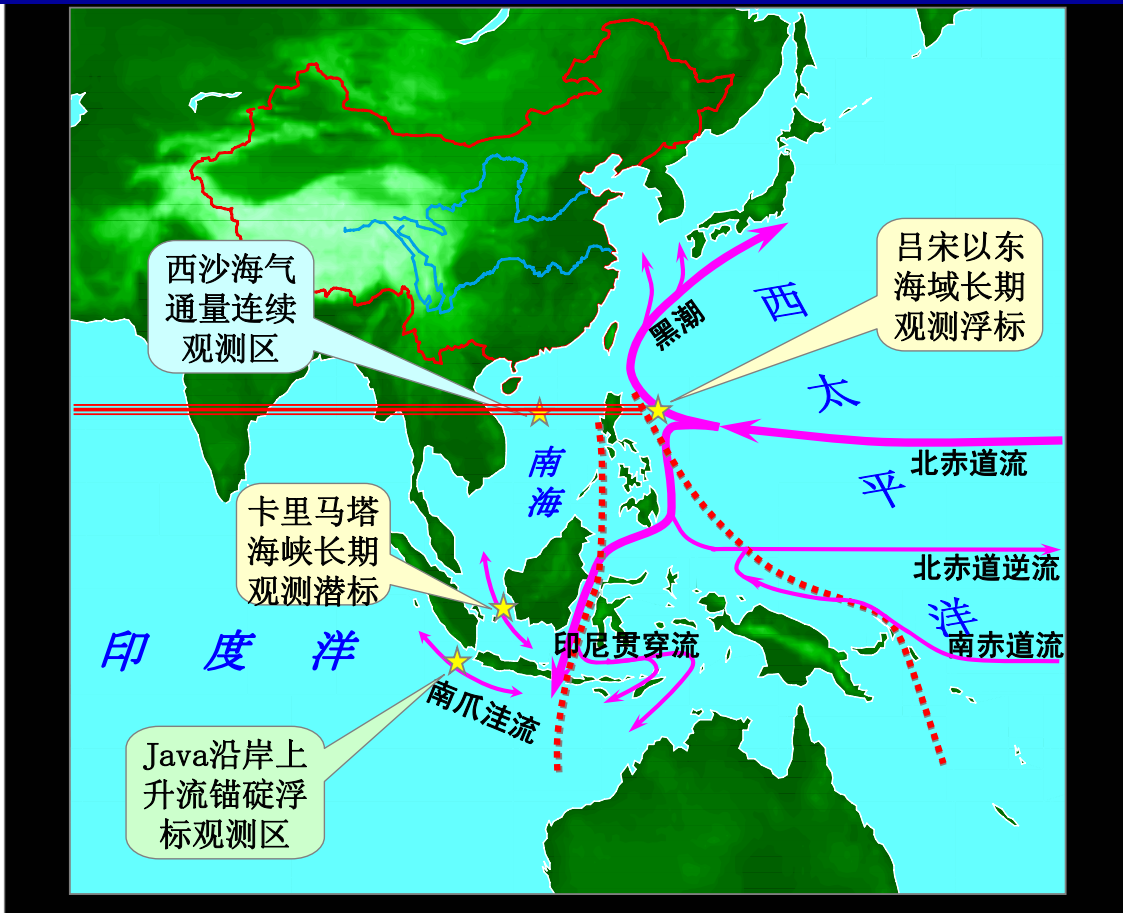
M. D. Yamanaka
(IORGC/KobeU)

S. Mori, P. M. Wu,
Hamada J. I., S. Ogino,
K. Ichianagi, T. Sasaki
(IORGC)
Y. Tachibana (IORGC/TokaiU)

China-Japan Cooperative Project On Weather Disaster Reduction

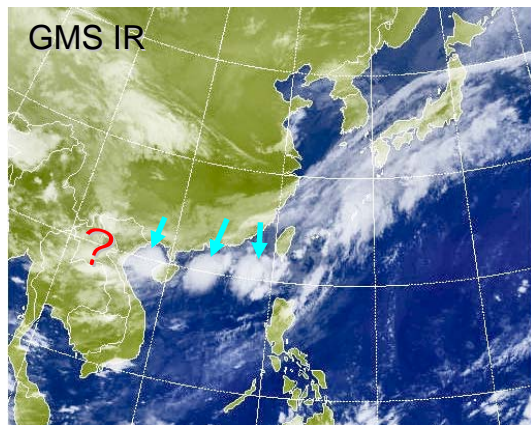


AMY08--18N Cross-section



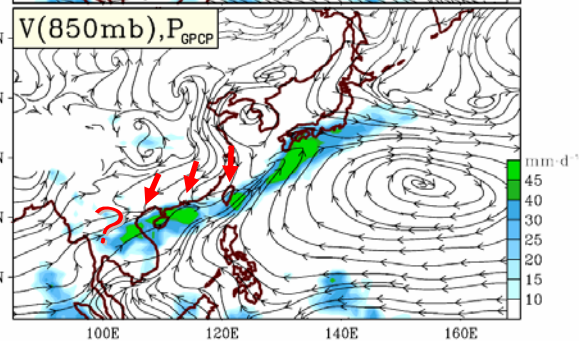
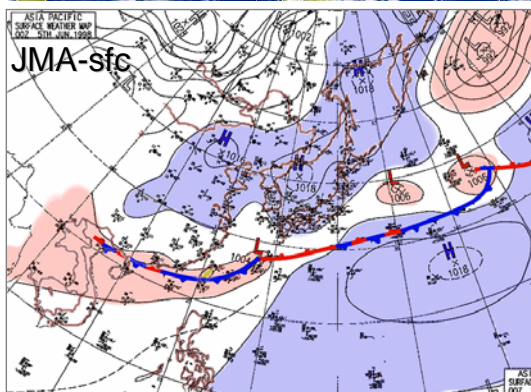
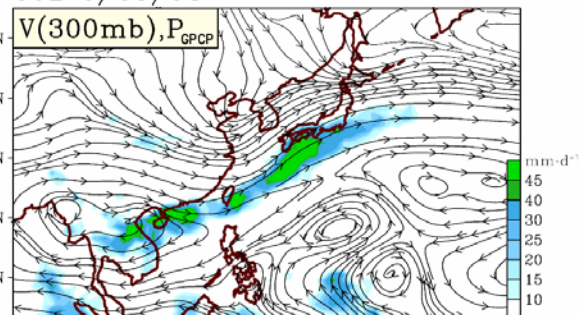
East Asian Monsoon Experiment (EAMEx)

a. Summer monsoon rainstorm experiment



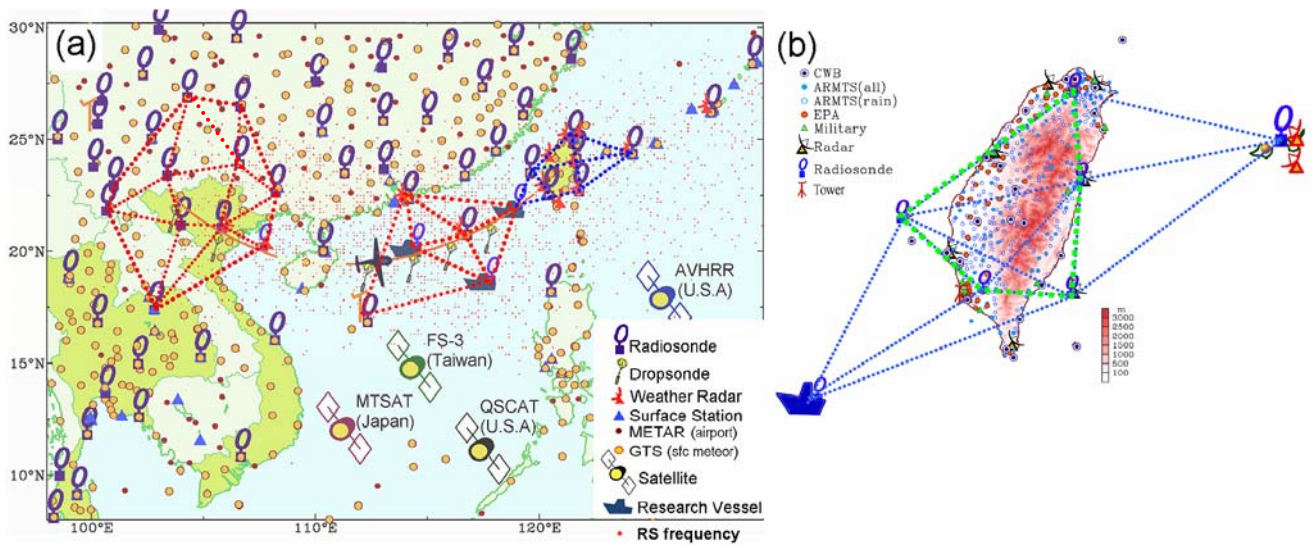
A 1998 SCSMEX case

00Z 6/05/98



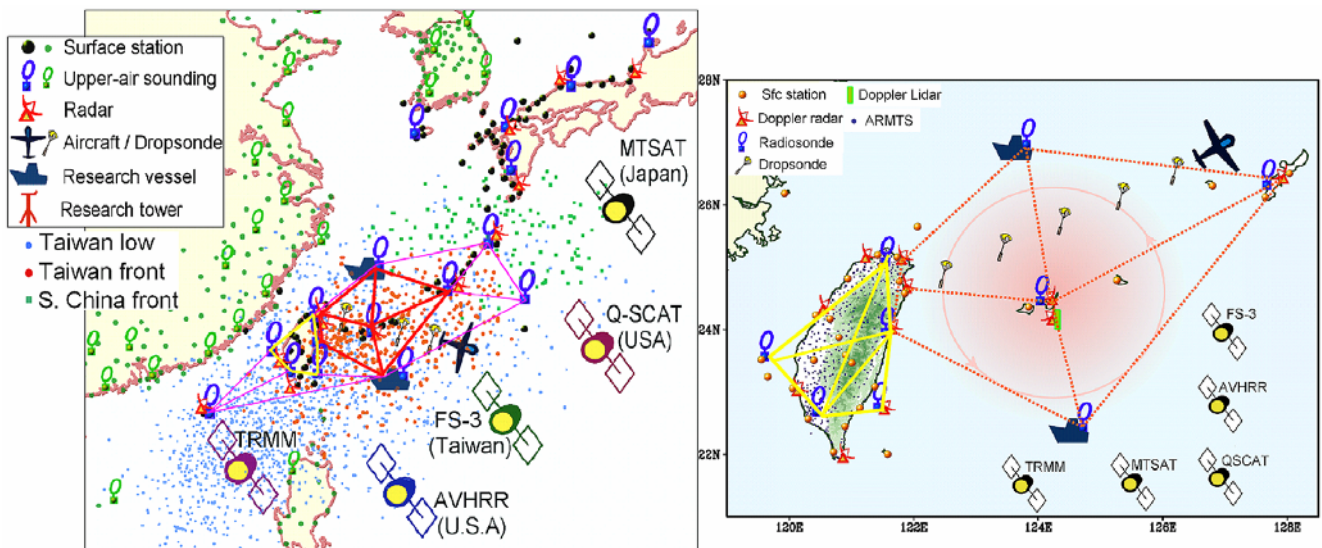
East Asian Monsoon Experiment (EAMEX)

a. Summer monsoon rainstorm experiment



East Asian Monsoon Experiment (EAMEX)

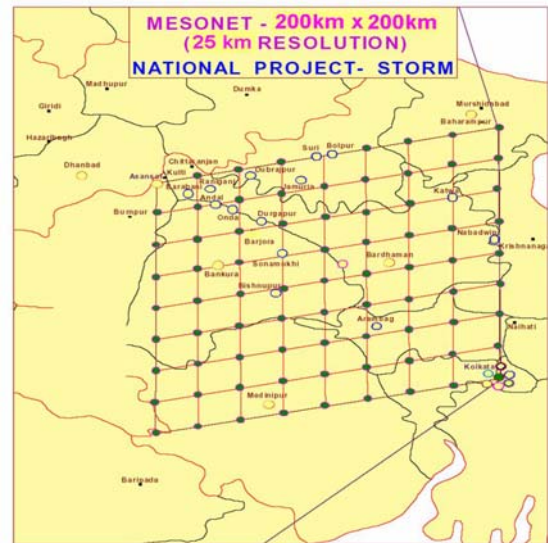
a. Winter monsoon rainstorm experiment



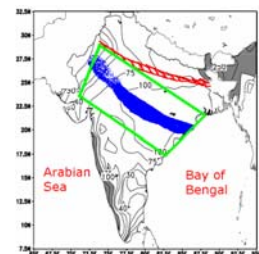
STORM - Field Experiment

Proposed Instrumentation BY 2008:

- **AWS** - meso-
network of 100 AWS
- **RS/RW** - 4 stations
(Additional)
- **Dropsondes** - 1
(instrumented IAF aircraft)
- **Wind Profilers** - 3
- **Mobile Doppler Radar** - 1
- **Research Ship at the Head Bay** - 1
- **Micro-towers** - 4; with 6
levels of instruments
- **Disdrometers** - 3
- **Atmospheric Electric Sensor** - 1
- **Aerosol Sampler** - 1
- **Aerosol particle sensors** - 2
- **Electric Mill** - 3



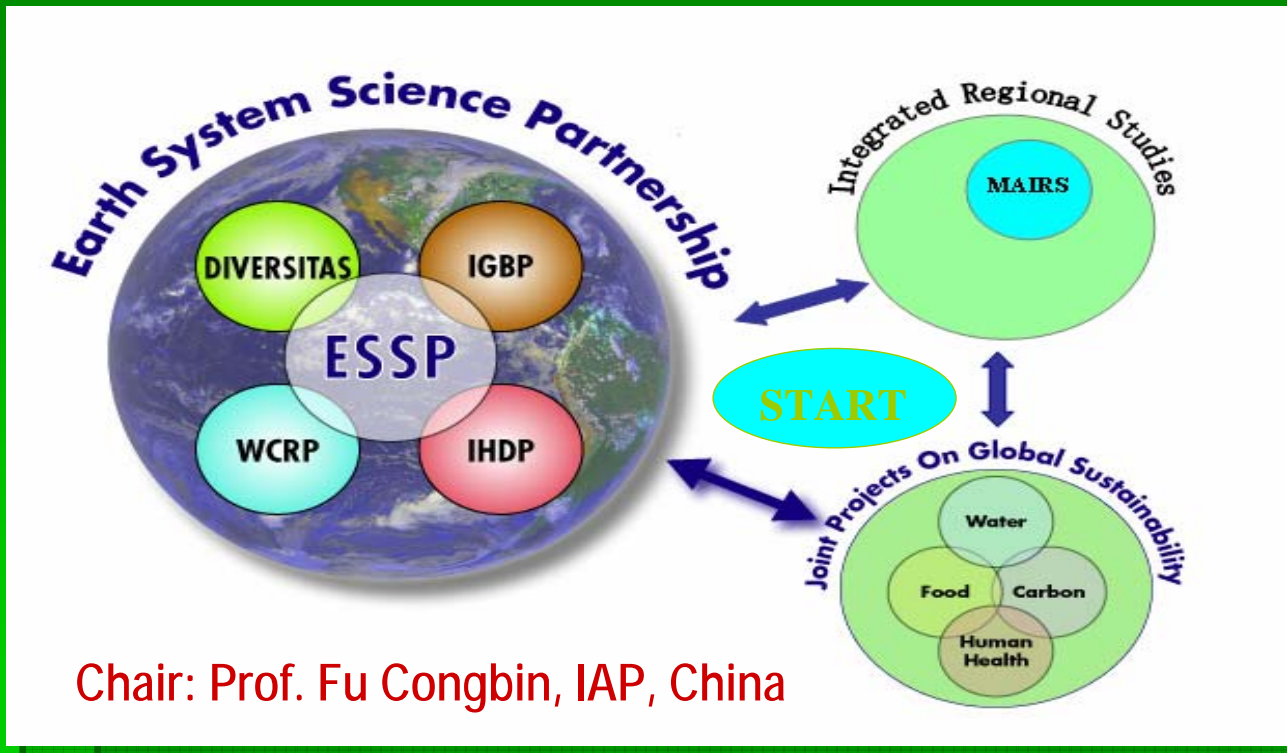
Continental Tropical Convergence Zone (CTCZ) as a component of coupled Land-Ocean-Biosphere-Atmosphere System 2008-2010



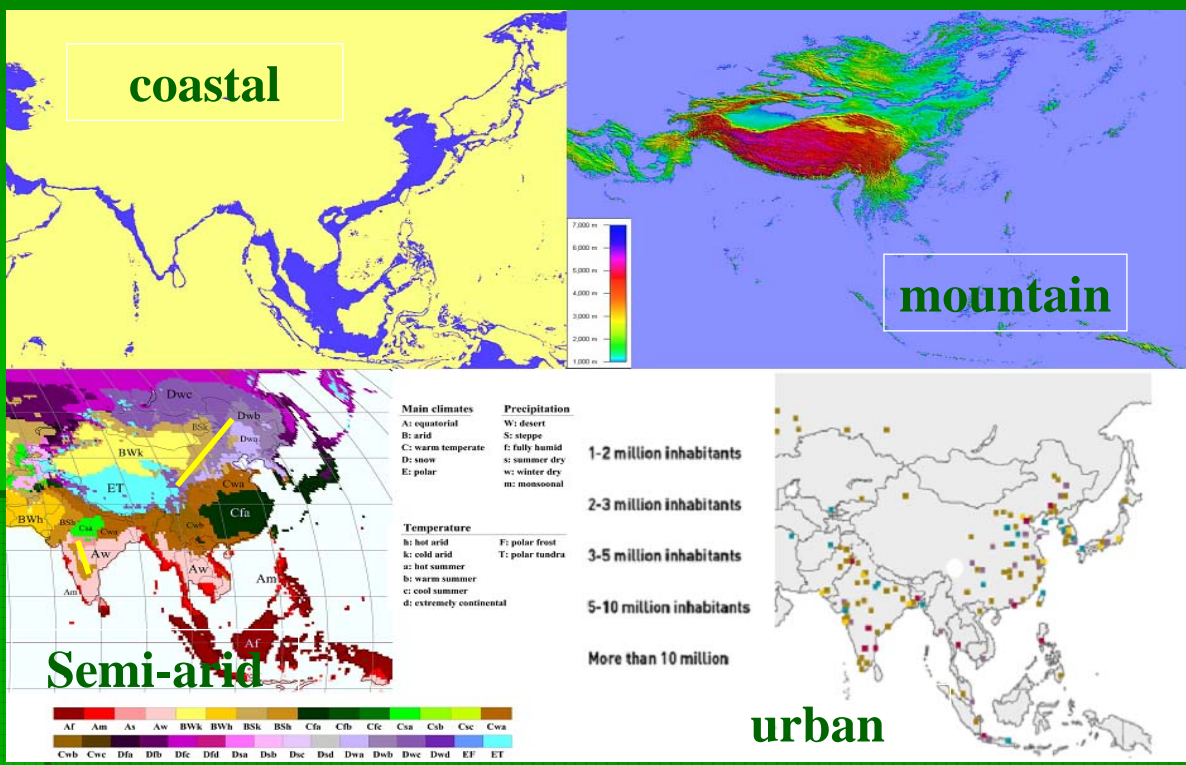
2008 - Pilot

- **Over land**
 - AWSs (~25-50), SRGs ~100
 - Flux towers (~5)
 - DW Radar network ~3-4
 - Aerosol measurements (~10)
 - High resolution radiosondes (3-4)
 - CCN & Cloud Microphysics
- **hydrology** 1 Water shed (Himalayan foothill)
- **Ocean** - 1 ship
buoy network (~90E line)

MAIRS (Monsoon Asia Integrated Regional Study) – an New Element of Earth System Science Programs (ESSP)



4 critical zones in monsoon Asia



Strategy for a project of projects

1. Data needs from whom and purpose, e.g. process study, validation, intercomparison, etc.
 - In-situ: MHASRI, AMMA, LPB, LBA, CPPA
 - Space agencies: Reference site/monsoonal region products
 - NWPCs: MOLTS, 3D prediction (global-, meso-scales)
 - Global data centers: radiation, precipitation, river
2. Data infrastructure need purpose
 - Meta data registry
 - Data quality check, format conversion
 - Data explore, visualization, mining, integration, dissemination
3. Climate region/cross-cutting science commonality which can be shared with whom.
 - WEBS, Aerosol, Extreme (flood & drought), Isotope, HAP
4. Needs for up-scaling and down-scaling
 - Up-scaling by using satellite data and model outputs
 - Down-scaling by using data assimilation and models
5. Needs for pilot demonstrations
 - AMY08
6. Clarification of limitations.
 - Communication among the projects

