

# **MAHASRI**

(**M**onsoon **A**sia **H**ydro-**A**tmosphere  
**S**cientific **R**esearch and Prediction **I**nitiative)  
(モンスーンアジア水文気候研究計画)



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鼎信次郎(総合地球研, 東京大学生産研)

芳村圭(東京大学生産研)

横井覚(東京大学理学研究科)



Mackenzie GEWEX  
Study (MAGS)



Data  
Management



GEWEX Americas  
Prediction Project (GAPP)

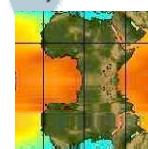
Large Scale  
Biosphere-Atmosphere  
Experiment in Amazonia  
(LBA)



African Monsoon  
Multidisciplinary Analysis  
(AMMA)



La Plata Basin  
(LPB)



Murray-Darling Basin  
(MDB)



Water and  
Energy Budget  
Studies

Worldwide  
Integrated Study  
of Extremes

Stable Water  
Isotope  
Intercomparison  
Group

Transferability

Water Resource  
Applications  
Project



# Implementation of GAME

## ★Phase I (1996-2001)

- Four regional experiments  
(Tropics, Tibet, HUBEX, Siberia)
- Asian AWS Network (AAN)
- GAME IOP 1998 (April – October) & GAME Reanalysis (GAME-RA)
- GAME-modeling activity (GCMs & RCMs)
- GAME data archive & management (GAIN)

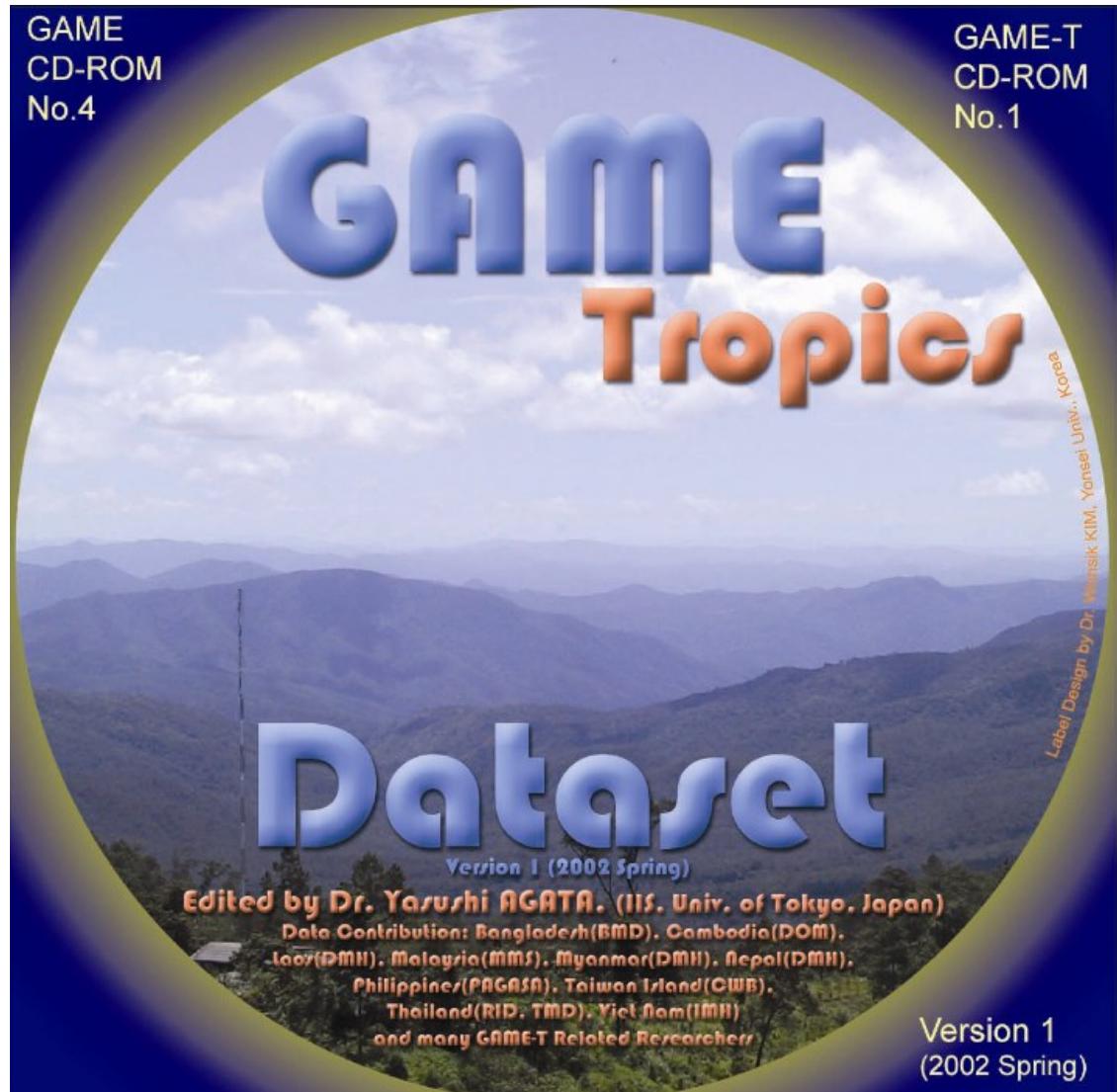
## ★Phase II (2001-2004) Research Phase

**CAMP(CEOP Asian Monsoon Project) (2002-2004)**

**Under WCRP/CEOP**

# Recent Achievement

- CD-ROM published
  - Complete ‘Snapshot’ of GAME-T database in June 2002.
  - Contains more than 8000 files (620MB)
  - Volume 2 has recently released in May 2006.



# GAME was over in March, 2005



*Then, what will be next?*

Flood in Assam, India, August, 2004

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→ Now is on the way to discuss (blush up!)

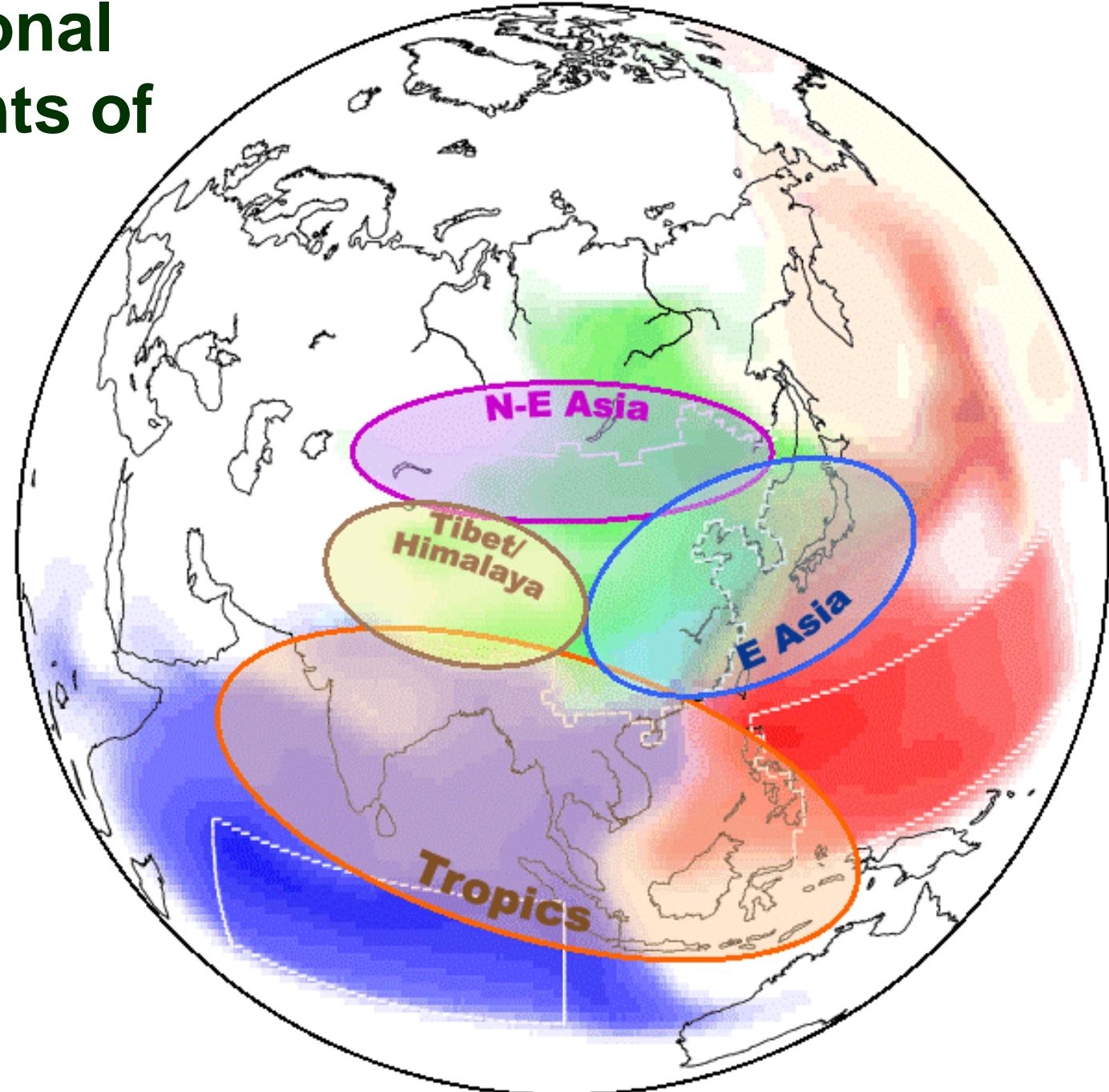
# Objective of MAHASRI in Science Plan

"To establish hydro-meteorological prediction system, particularly up to seasonal time-scale, through better scientific understanding of Asian monsoon variability".

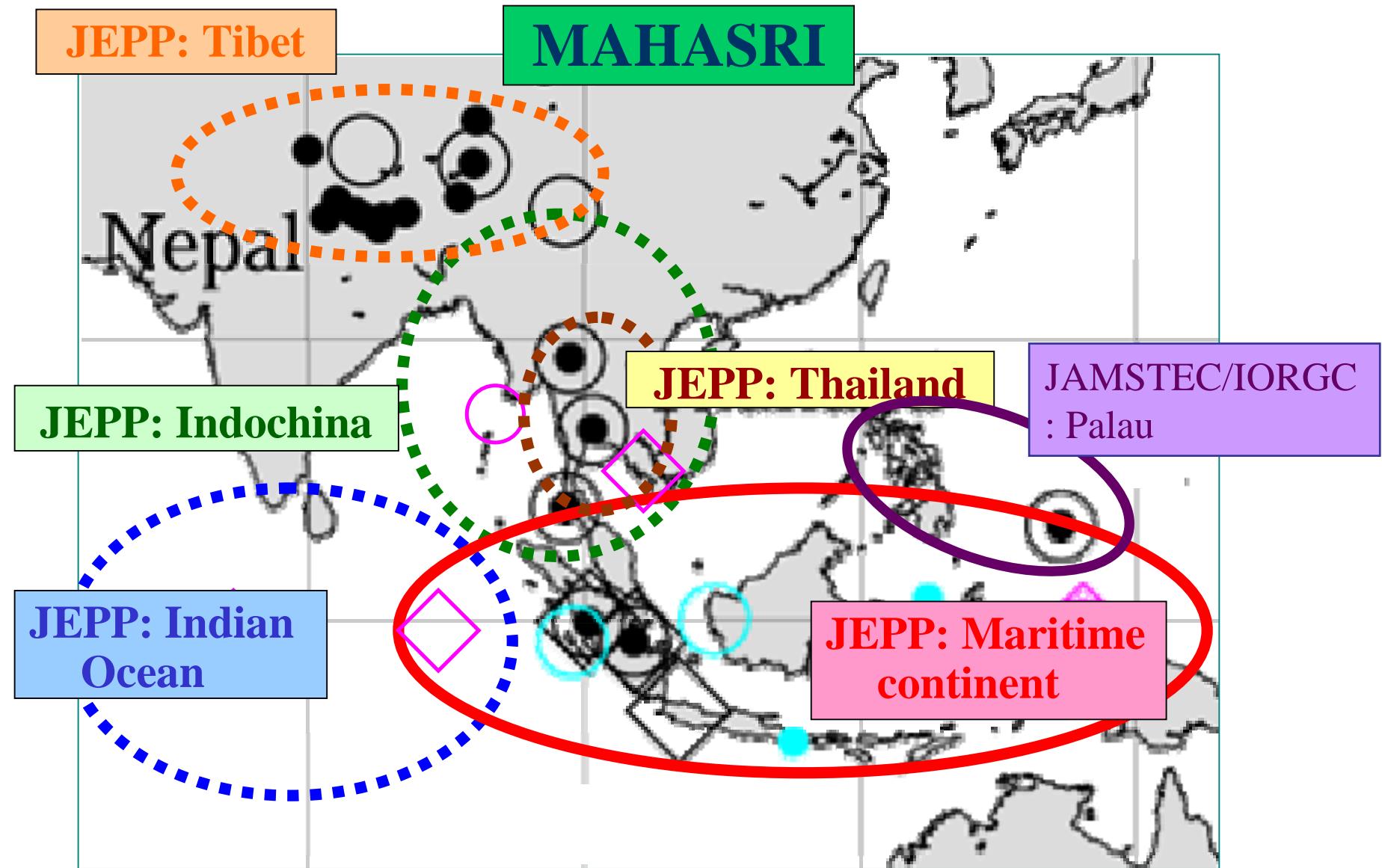
(アジアモンスーンの変動機構理解による季節以下の時間スケールにおける水文気象予測システムの構築)

この目的は10年研究計画で重み(予測システム構築, アジアモンスーンの科学的理解の深化)が変わるが相補的に行われる必要がある.

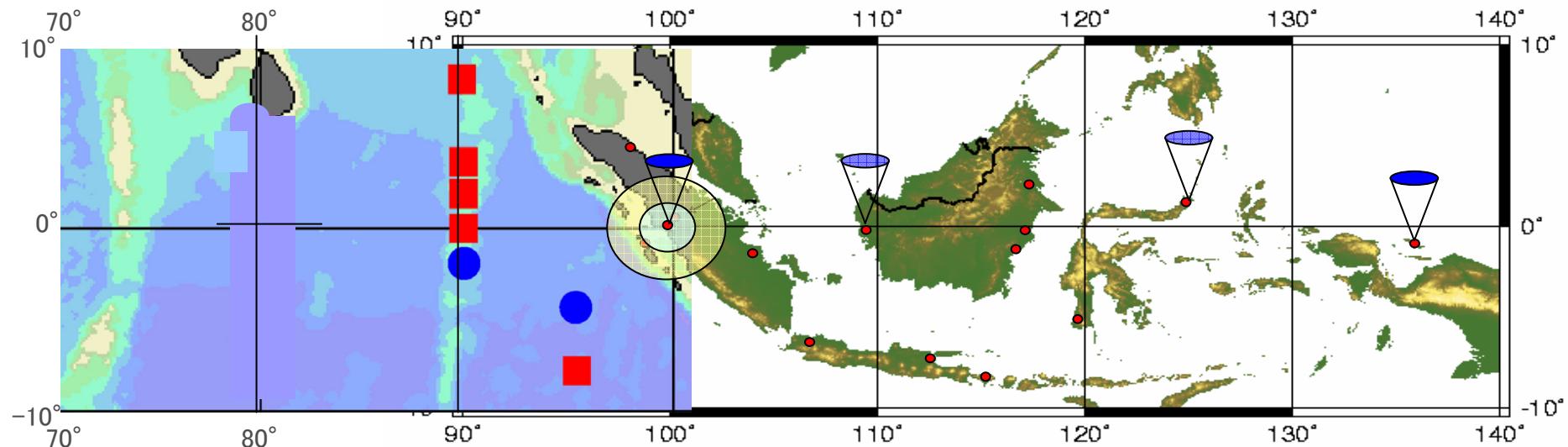
# Four Regional Components of MAHASRI



# MAHASRI and related Japanese Projects (JEPP)



**Japan EOS Promotion Program (JEPP) (山中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)

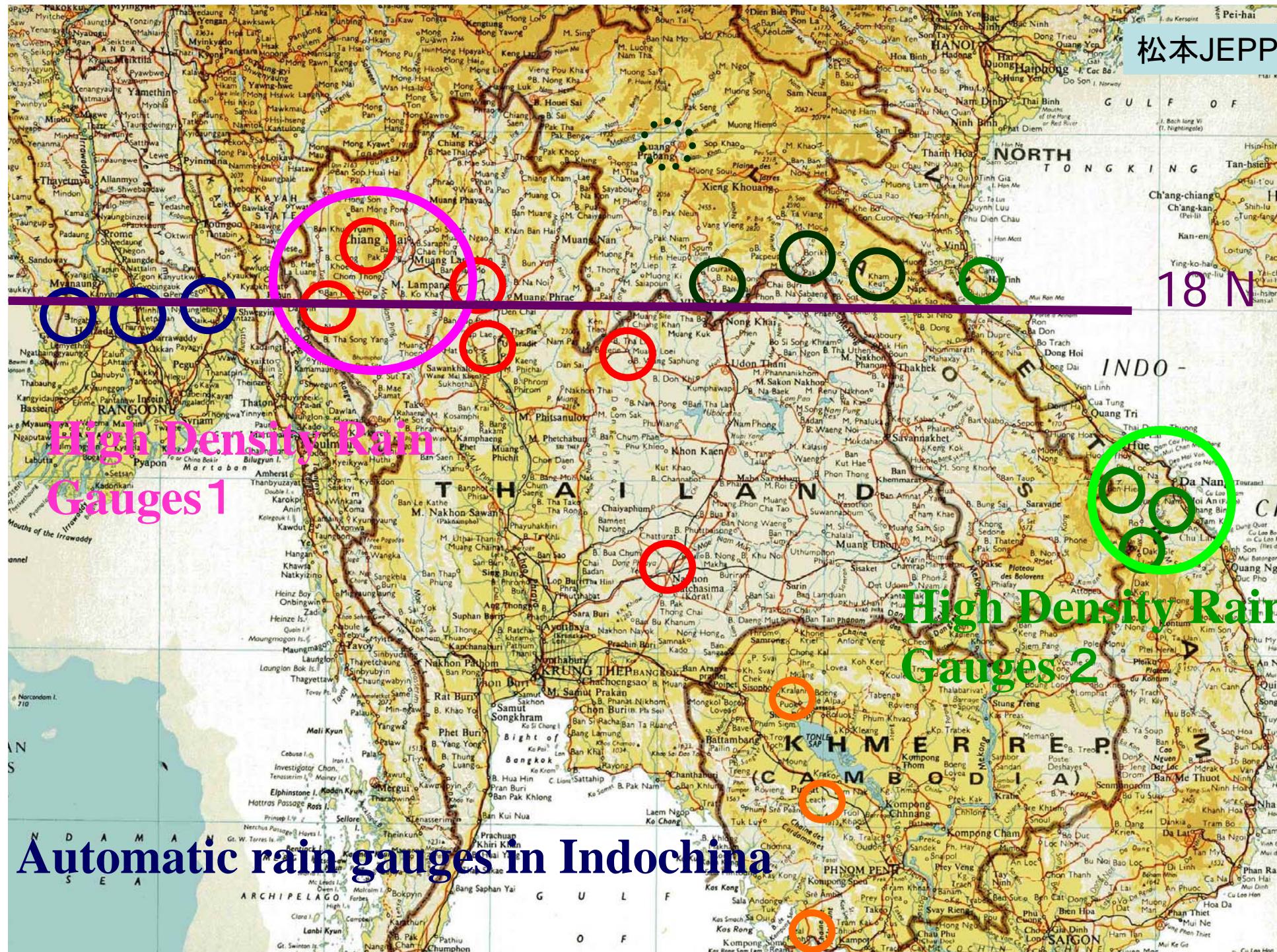
**Maritime-Continent Radar Network**

**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. Ichiyanagi, T. Sasaki  
(IORGc)  
Y. Tachibana (IORGc/TokaiU)

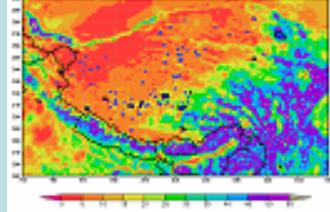


# Japan EOS Promotion Program (JEPP) Theme 2-2 (石川JEPP)

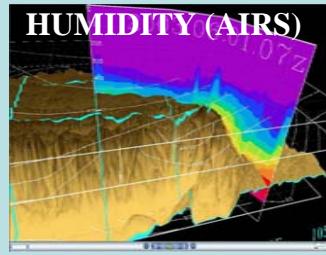
## Promotion of Integrated Observational Study of Energy and Water Circulation on and over the Tibetan Plateau

### Satellite Obs. Systems

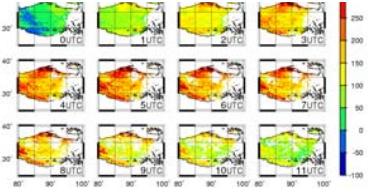
SOIL WATER(SSMI)



HUMIDITY (AIRS)

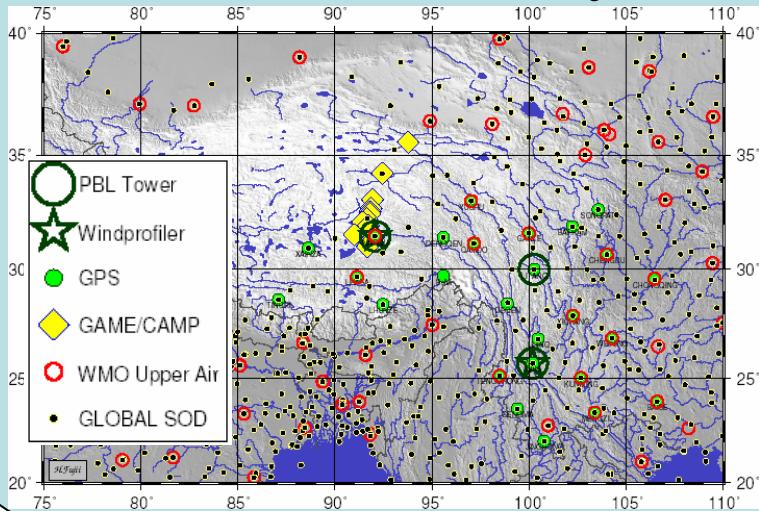


SURFACE FLUX (FY2C)

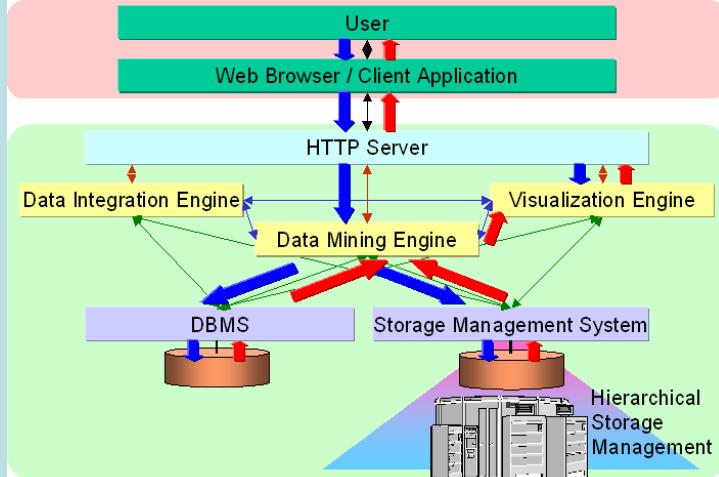


and  
others

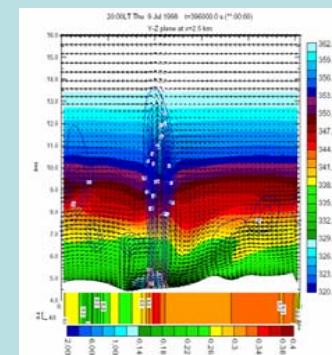
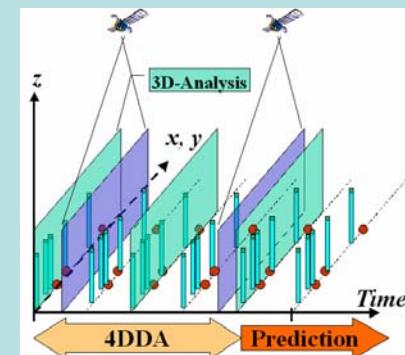
### Ground Based Obs. Systems



### Data Integration, Visualization, Mining

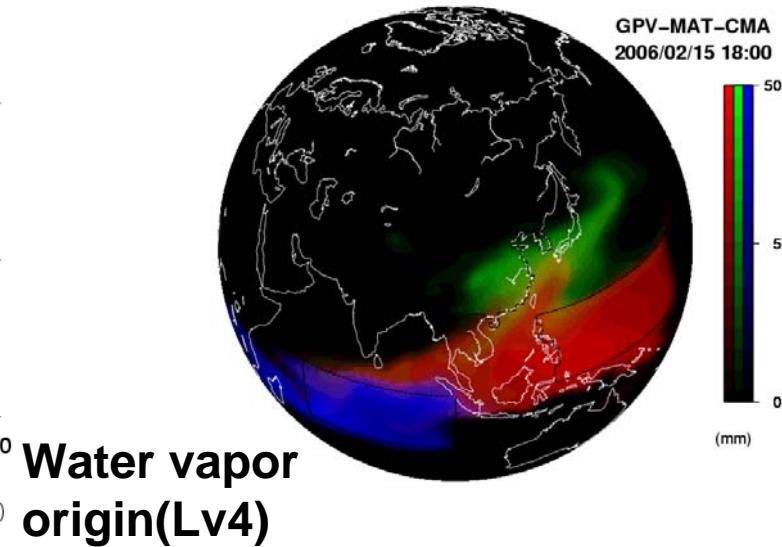
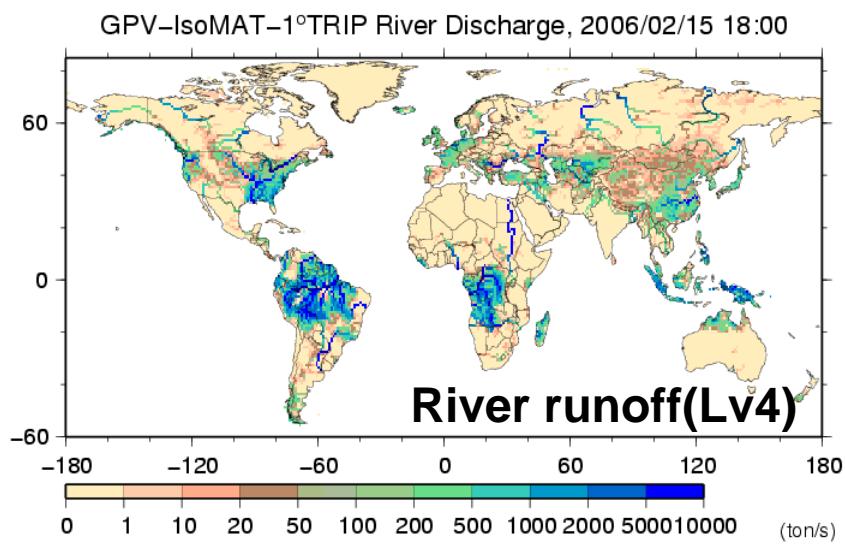
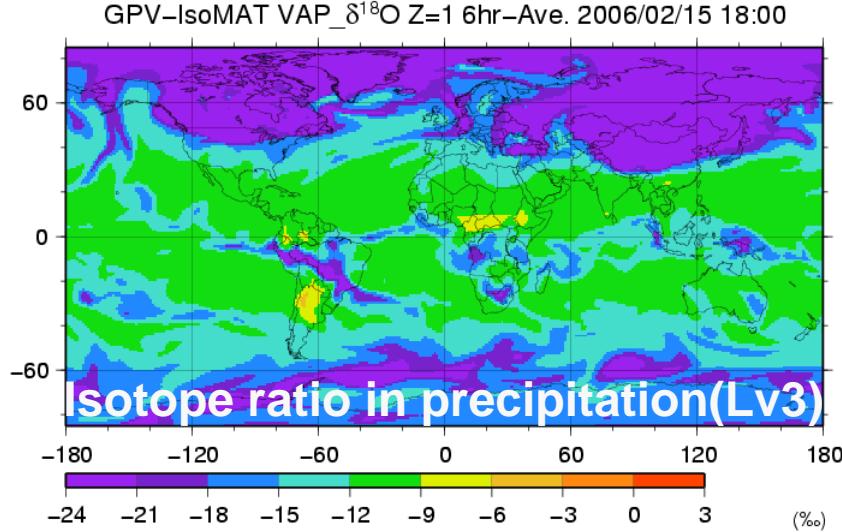
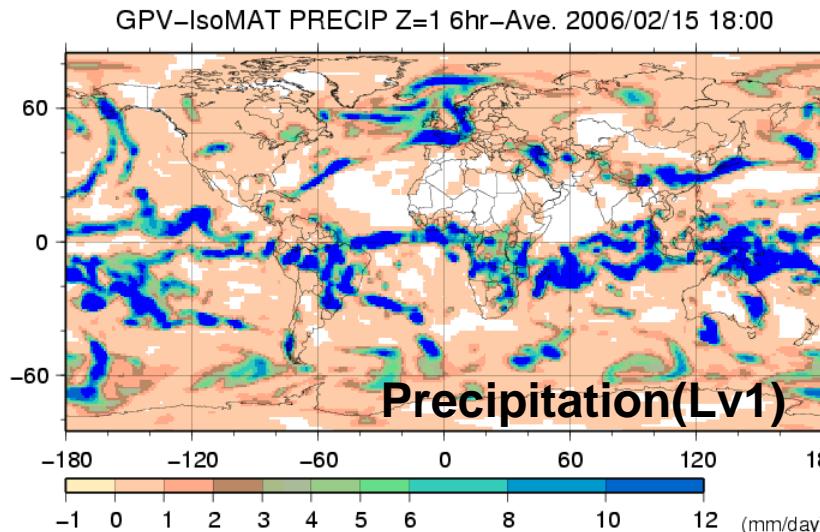


### 4-D Data Assimilation

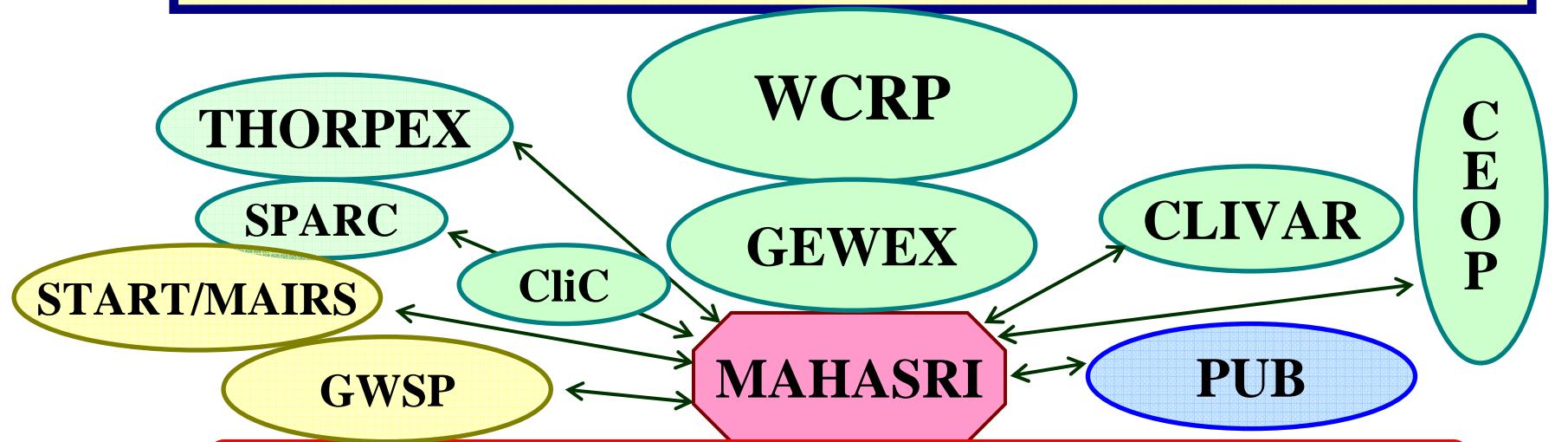


# Today's Earth: Global version

<http://hydro.iis.u-tokyo.ac.jp/Earth>



# Framework



**MAHASRI International Science Committee (MISC)**



P Project

# まとめ

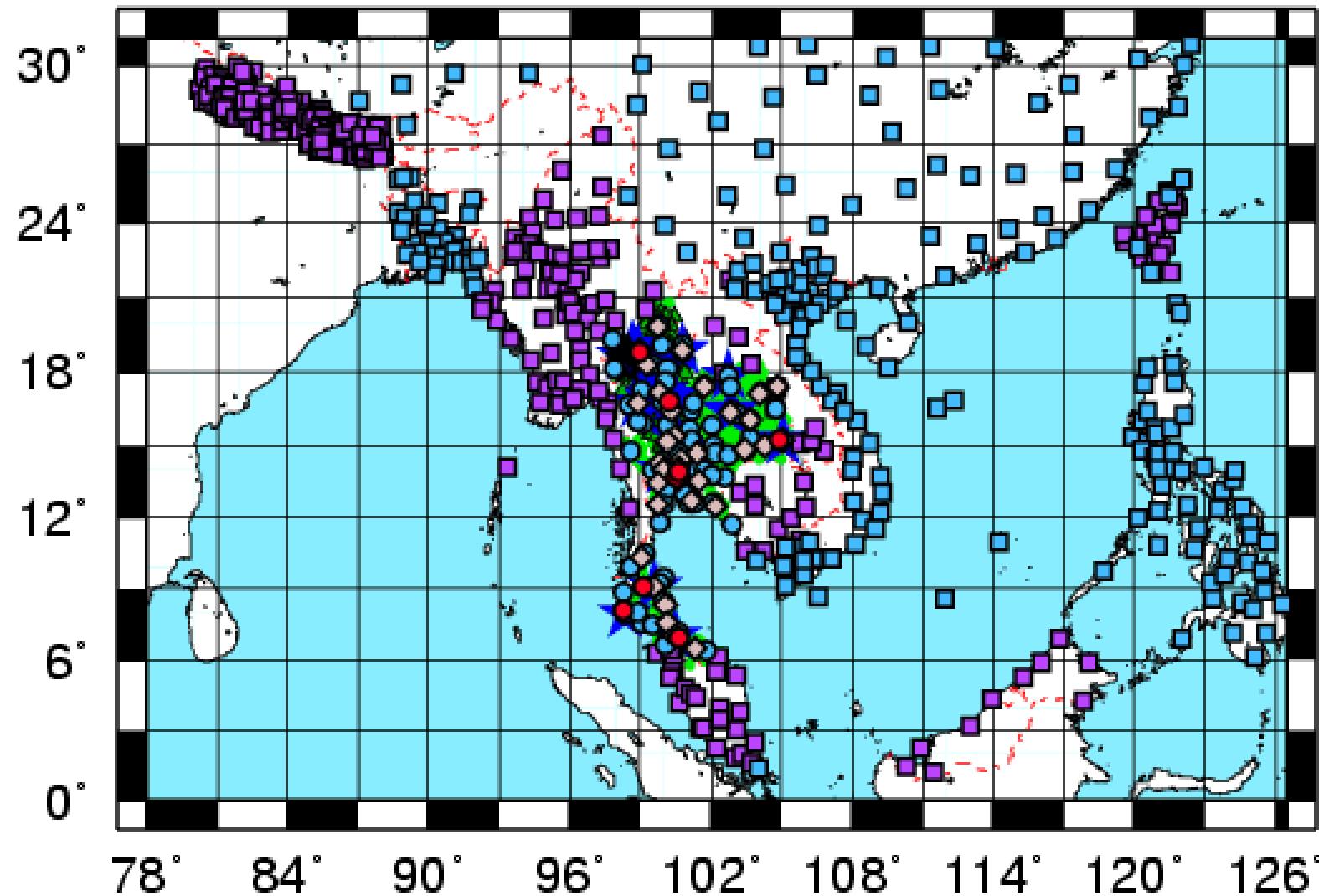
- MAHASRI は胎動したばかりであり, GAMEで一部実現された気象・水文のより密接な連携が求められる(Science と applicationの連携)
  - PUBとの連携, 応用系水文とのより密接な連携, etc ...
- 我こそは！と思う方々の参加(できればidea と, お金を持っている方)を期待.
  - ML, website も暫定的ながら運営中
  - ML: [mahasji-jp@mahasri.cr.chiba-u.ac.jp](mailto:mahasji-jp@mahasri.cr.chiba-u.ac.jp)
  - Website: <http://mahasri.cr.chiba-u.ac.jp>
- 来年度5月地球惑星連合合同大会でMAHASRIセッションをスペシャルセッションとして開催予定([予] 水水, 気象学会, 学術会議MAHASRI小委員会共催)
  - 是非積極的なエントリを期待します！



**Bodhisattva Stupa-mahasri** 卒都波大吉祥菩薩 also known as the *Vajra of Joyous Benefit*. Stupa refers to the 5 Elements that constitutes all sentient beings. This deity manifests the joy of liberation in the midst of the endless cycles of birth & death that sentient beings experience.

We have collected quite good data, especially in Indochina

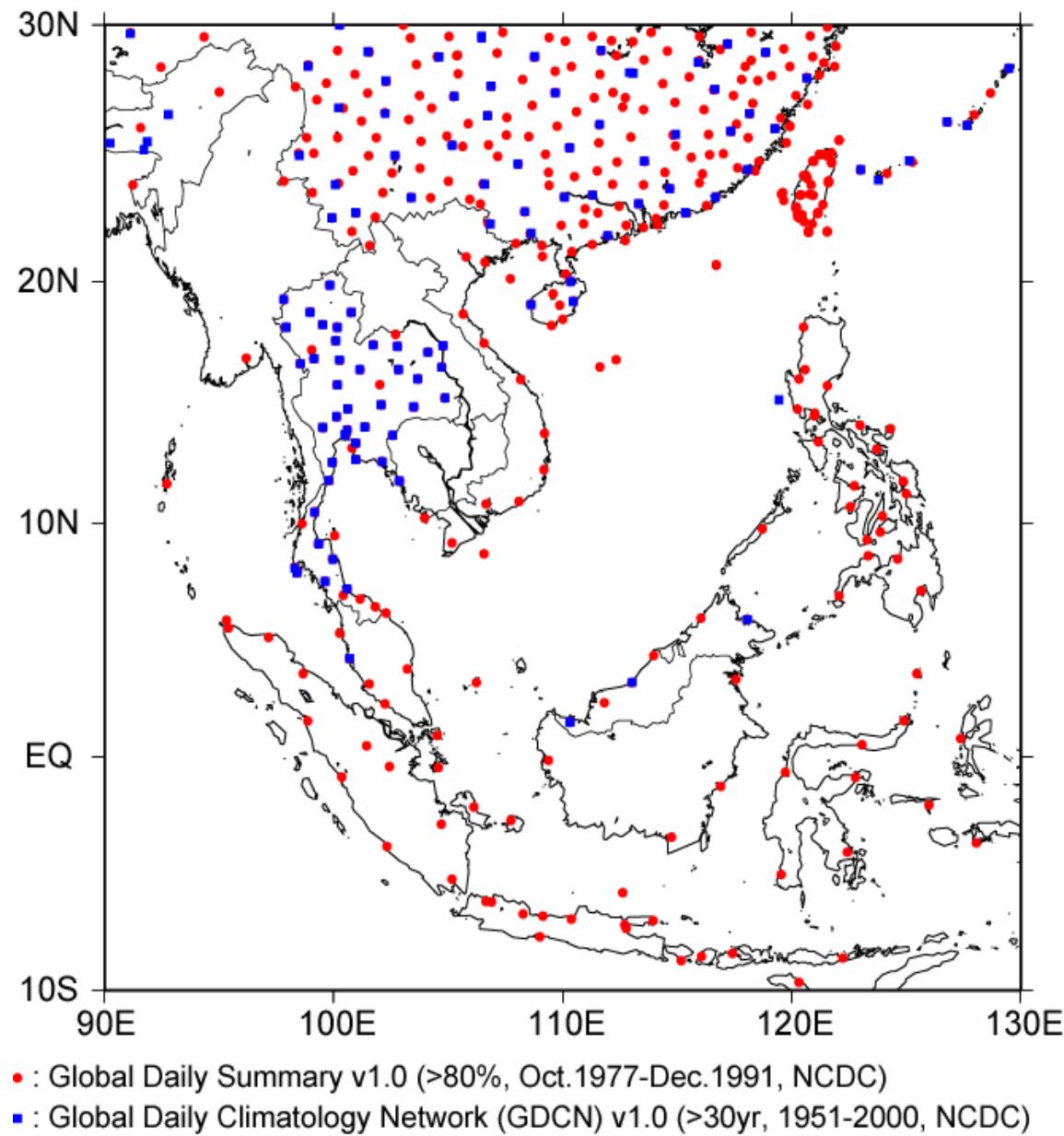
## Routine Obs. Stations in Ver. 2

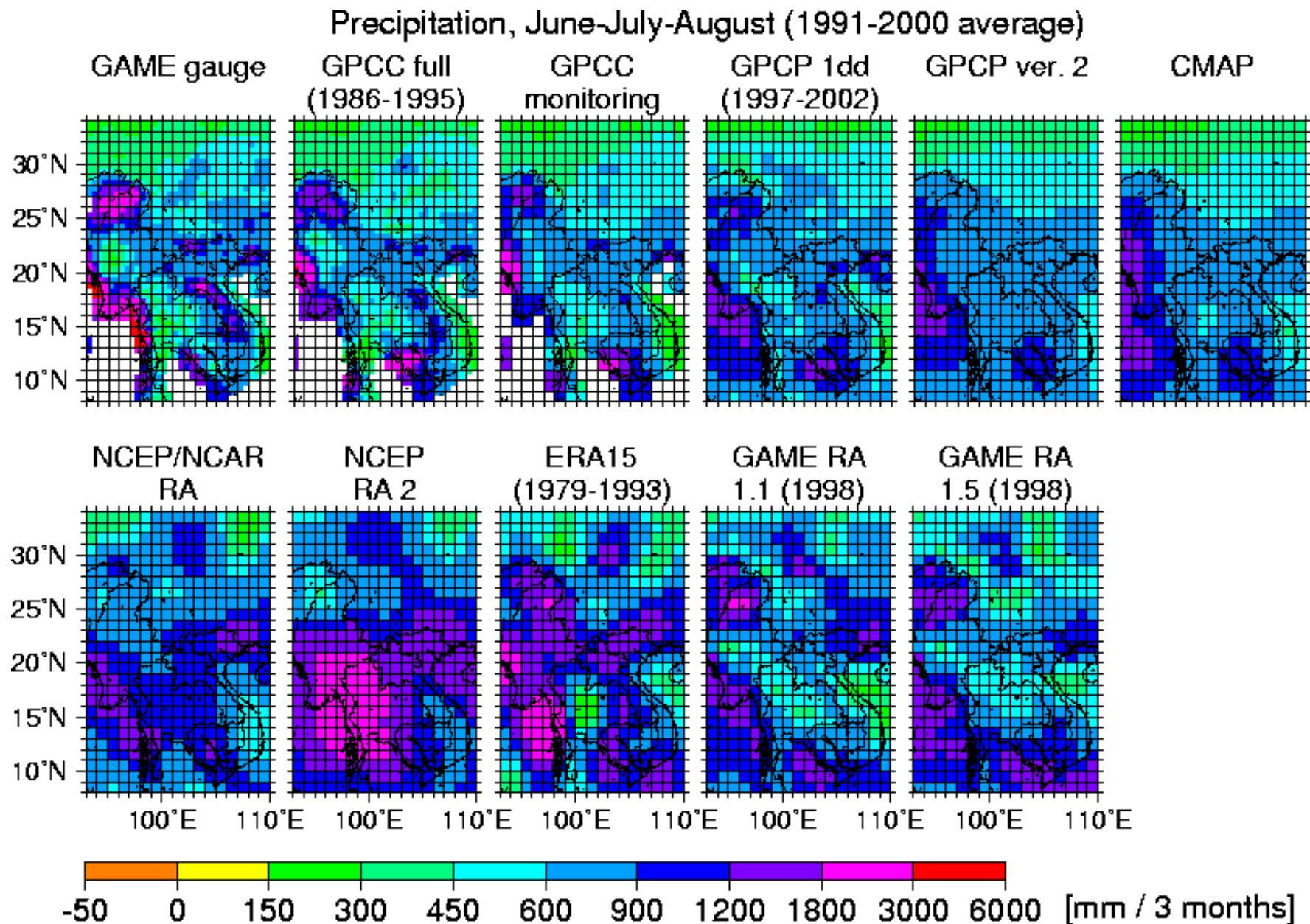


<http://hydro.iis.u-tokyo.ac.jp/GAME-T/GAIN-T/index.html>  
<http://gain-hub.mri-jma.go.jp>

# Indochina has been a data sparse region in monsoon Asia

STATIONS AVAILABLE FOR DAILY DATA





(Masuda, K. 2004)