

Precipitation systems in and around Bangladesh: Some preliminary results and Problems to solve

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With

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19 October 2006, Bangkok,

GeoFea

30N

20N

10N

EQ

60E

70E

80E

90E

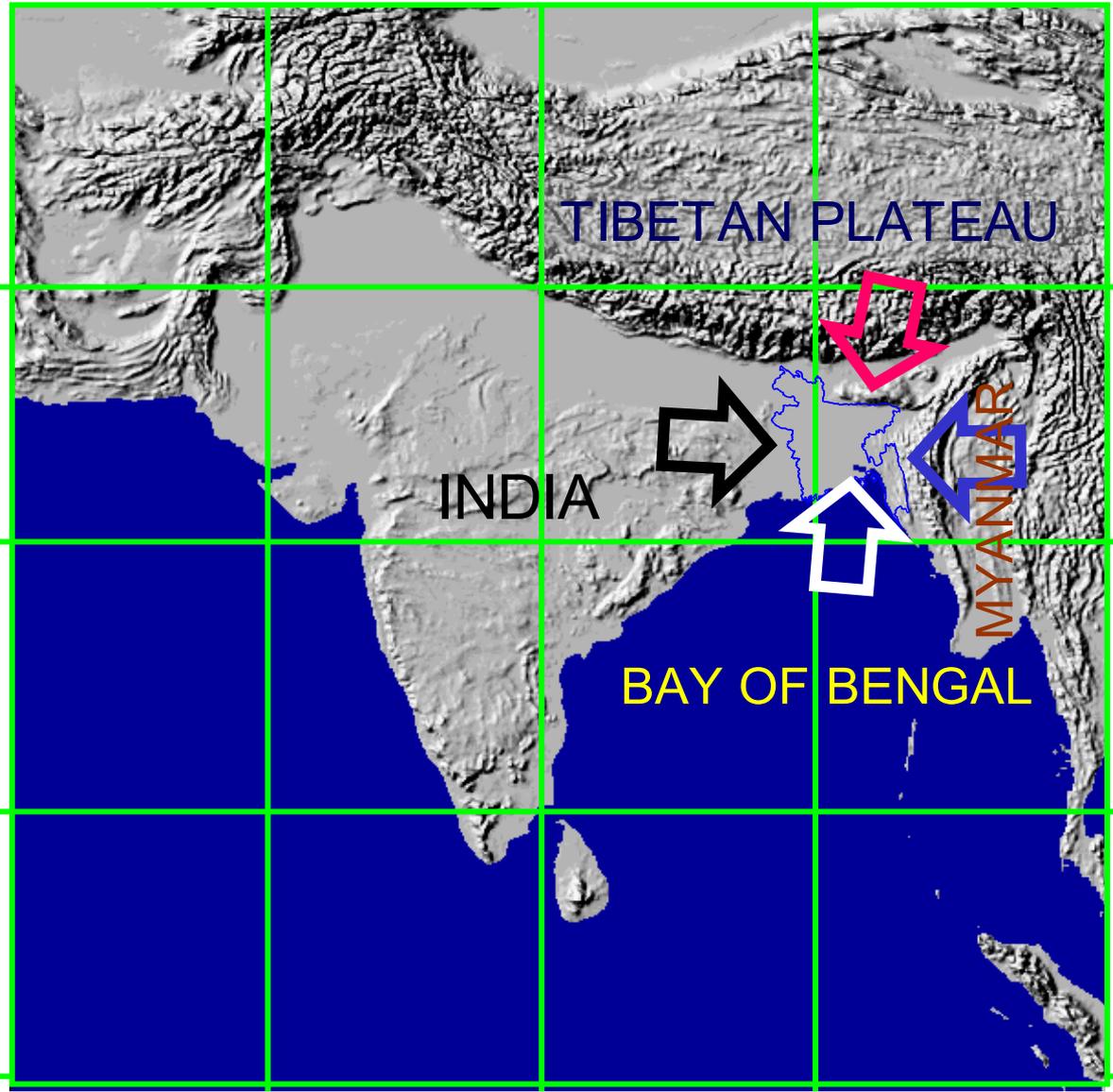
100E

TIBETAN PLATEAU

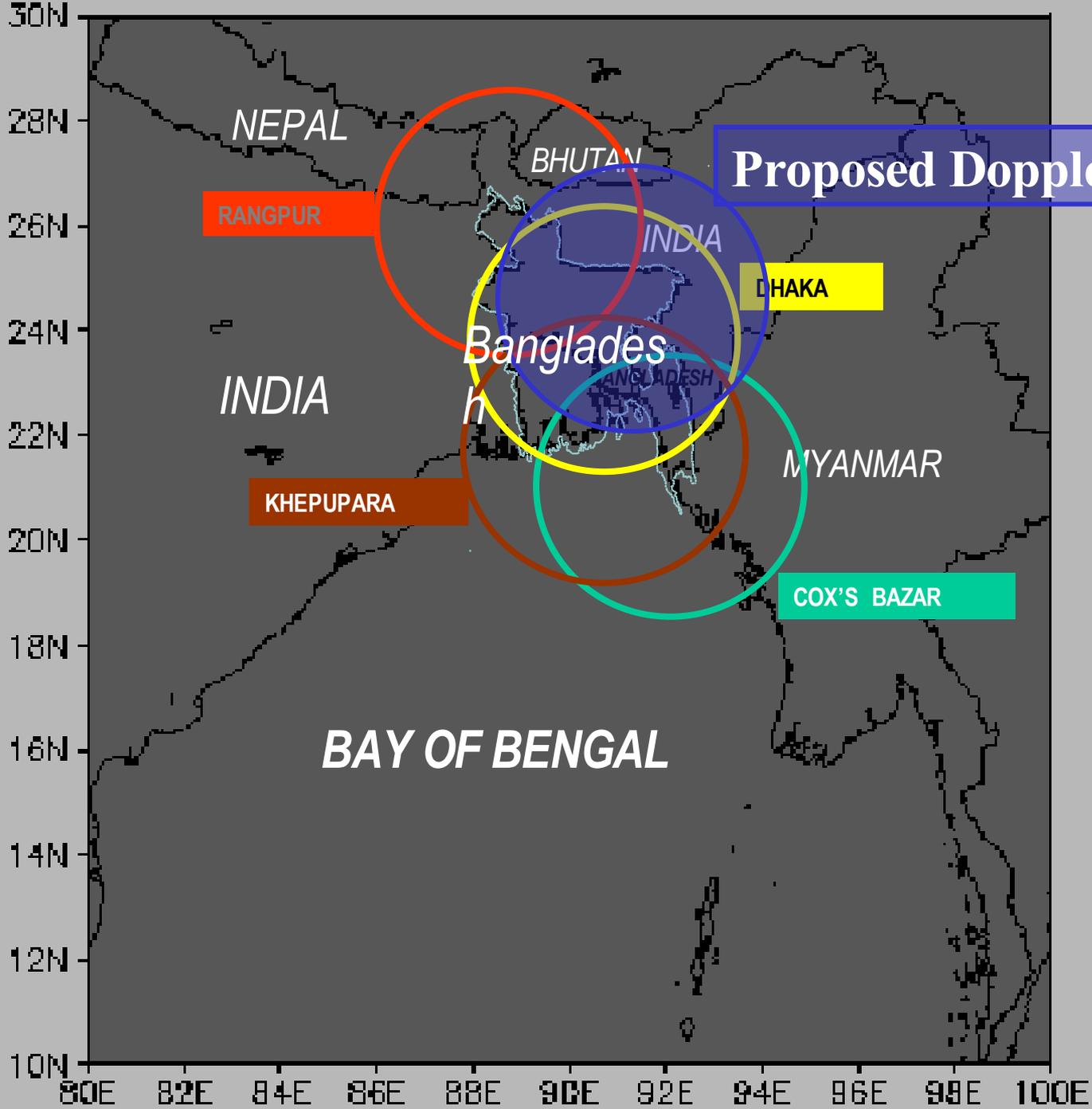
INDIA

BAY OF BENGAL

MYANMAR



Mesoscale Convective Systems ?



Proposed Doppler Radar

**BMD Radar
Facilities**

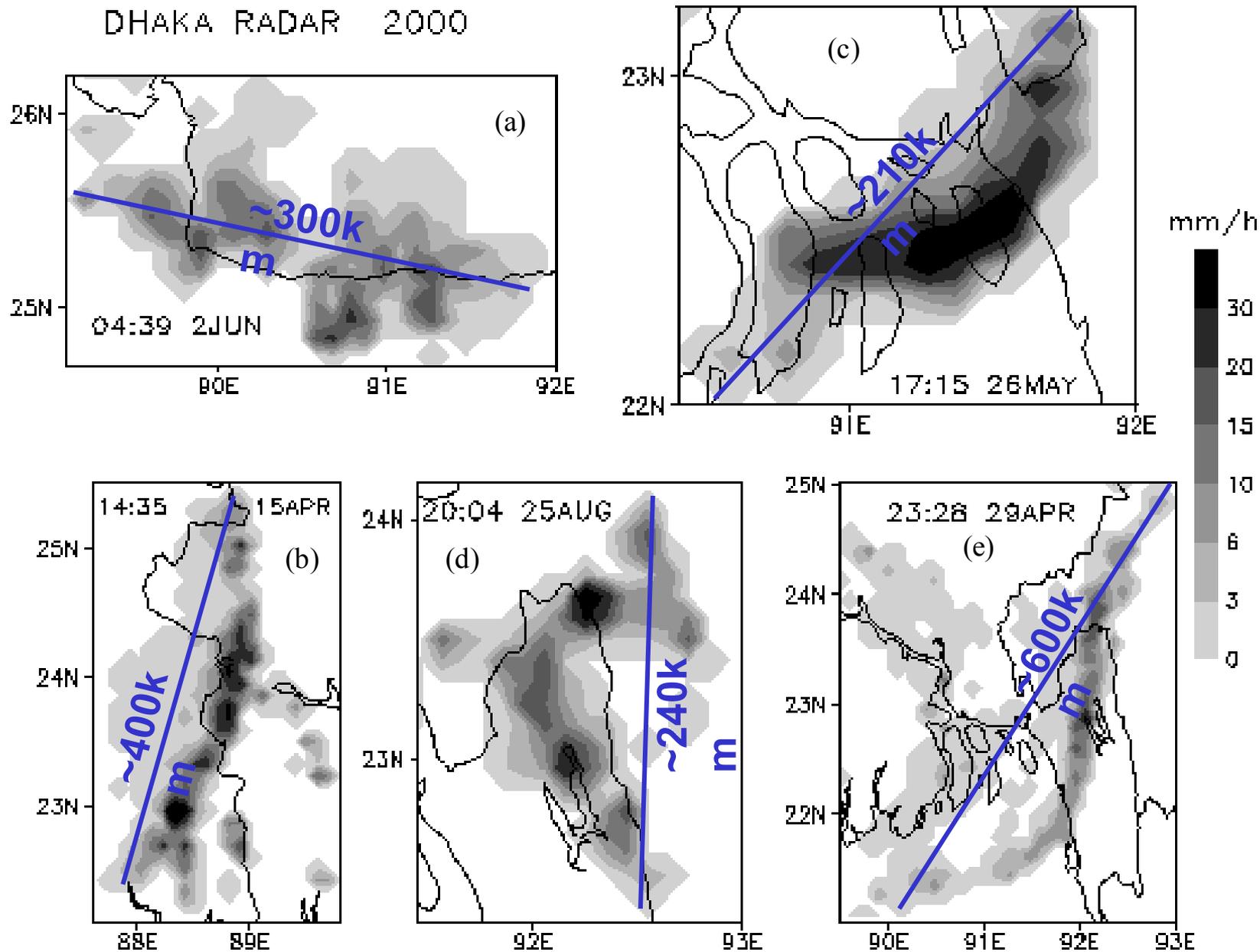


Fig. 3. Instantaneous rain rate: (a) 04:39 LST, 2 June (a morning case); (b) 14:35 LST, 15 April (an afternoon case); (c) 17:15 LST, 26 May (an evening case); (d) 20:04 LST, 25 August (a late evening case); and (e) 23:28 LST, 29 April (a midnight case), in 2000.

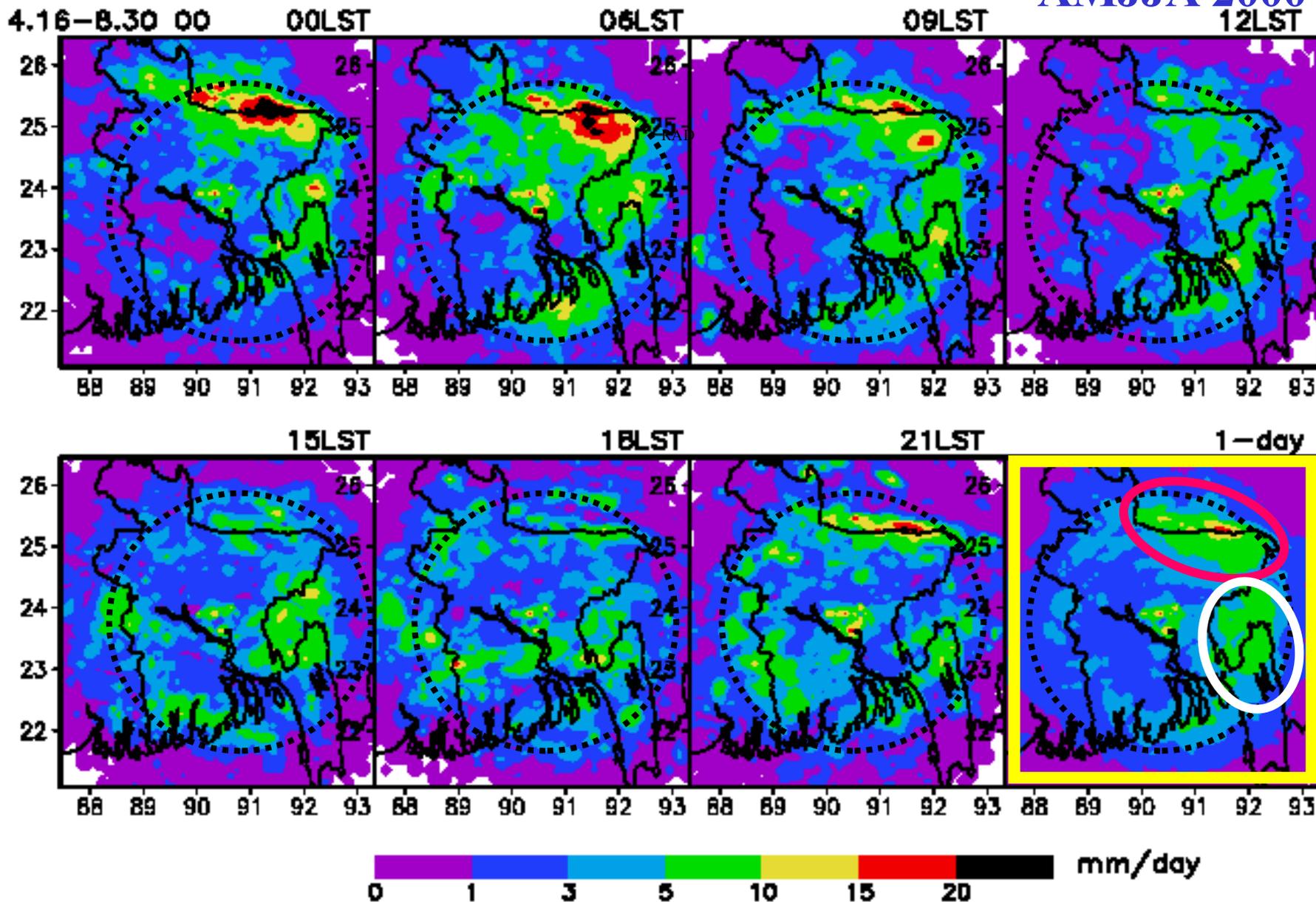
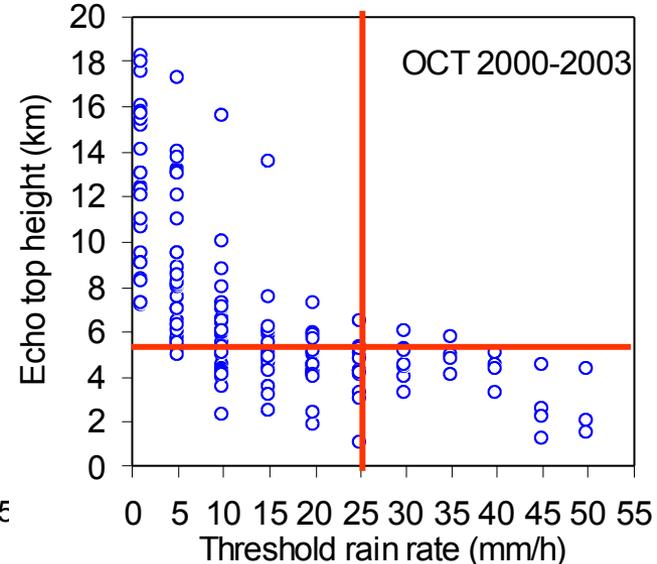
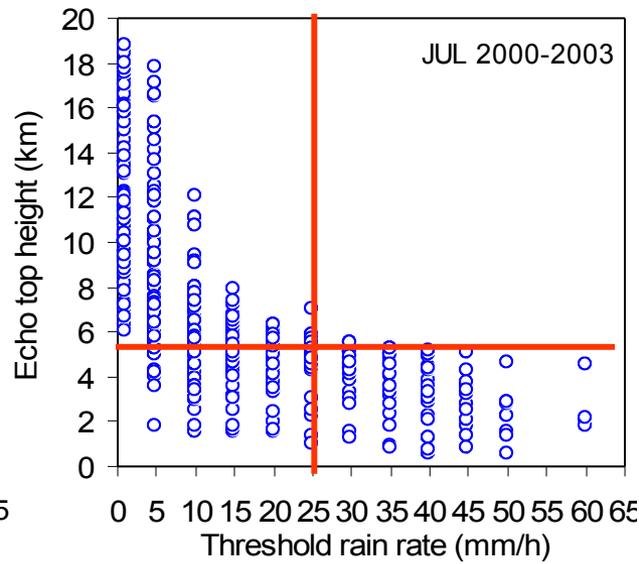
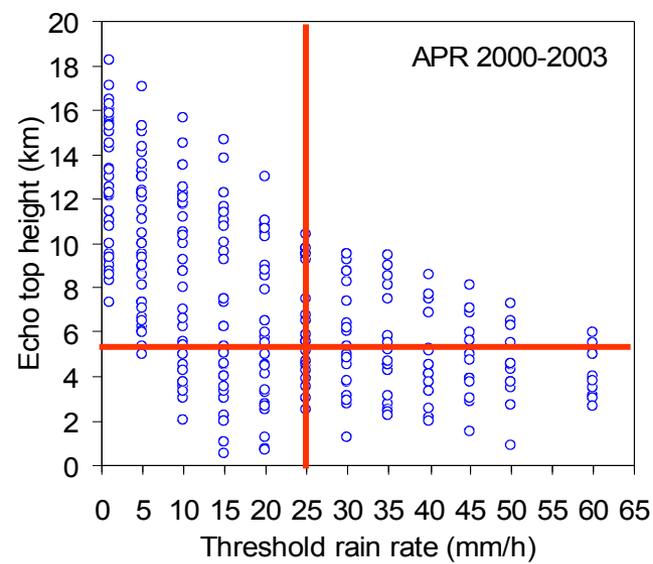
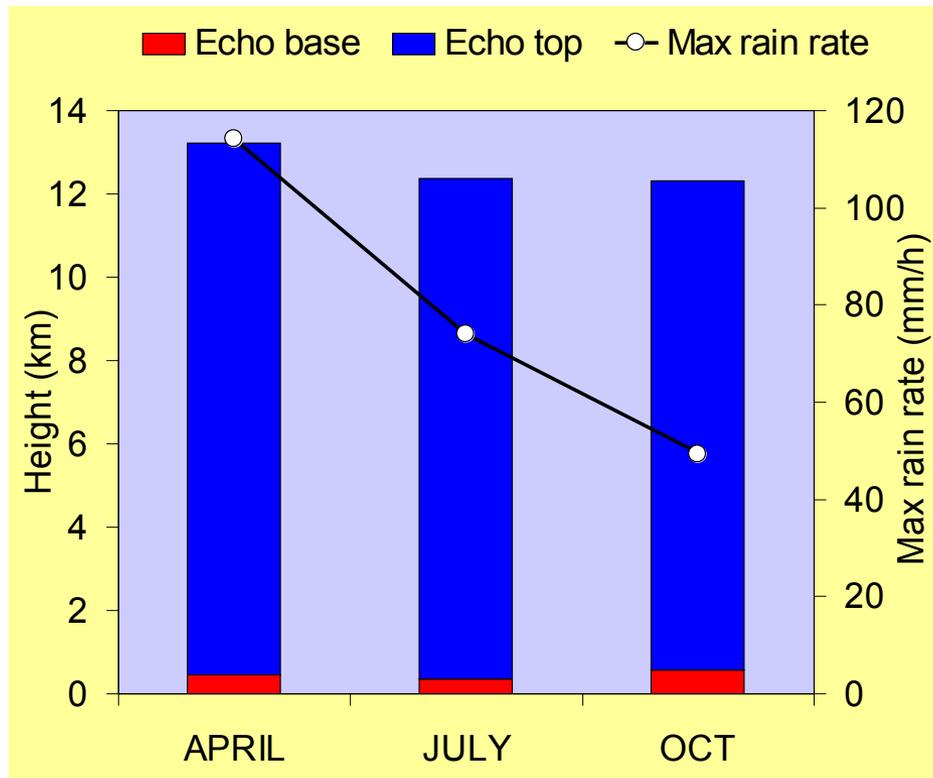


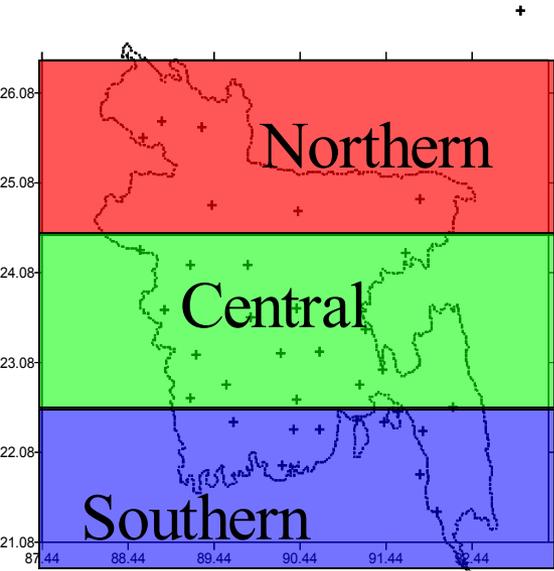
Fig. 11. Same as Fig. 7 except averaged for 16 April to 30 August 2000.

TRMM 2A25

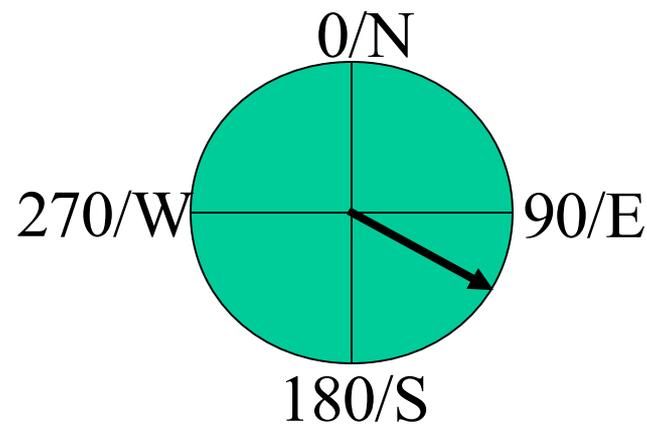
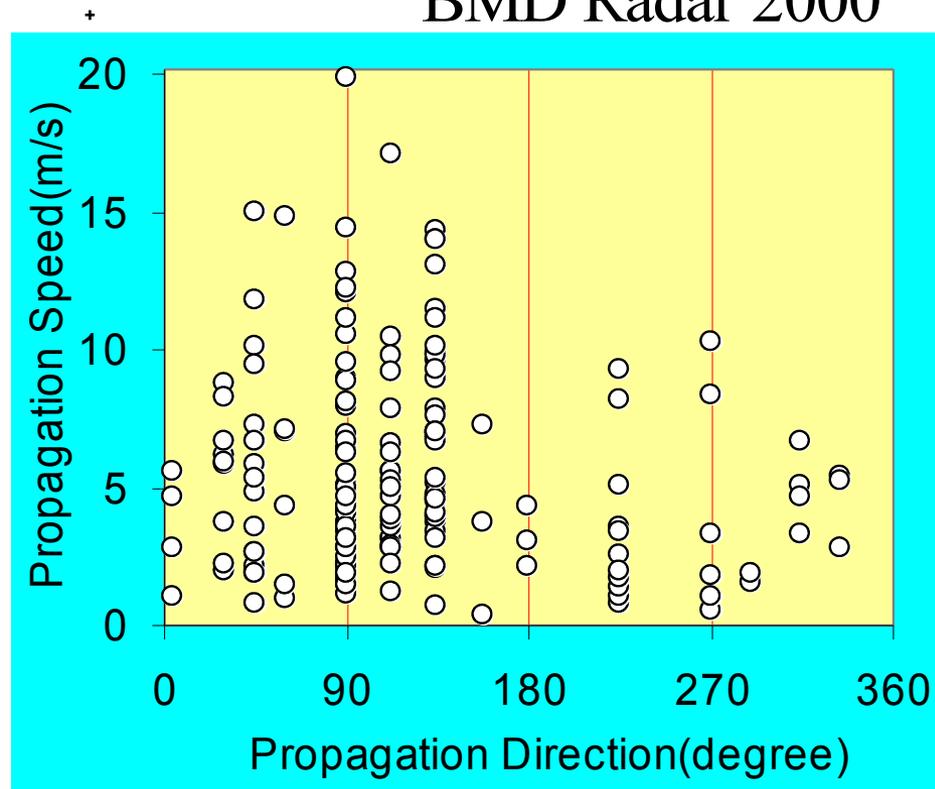
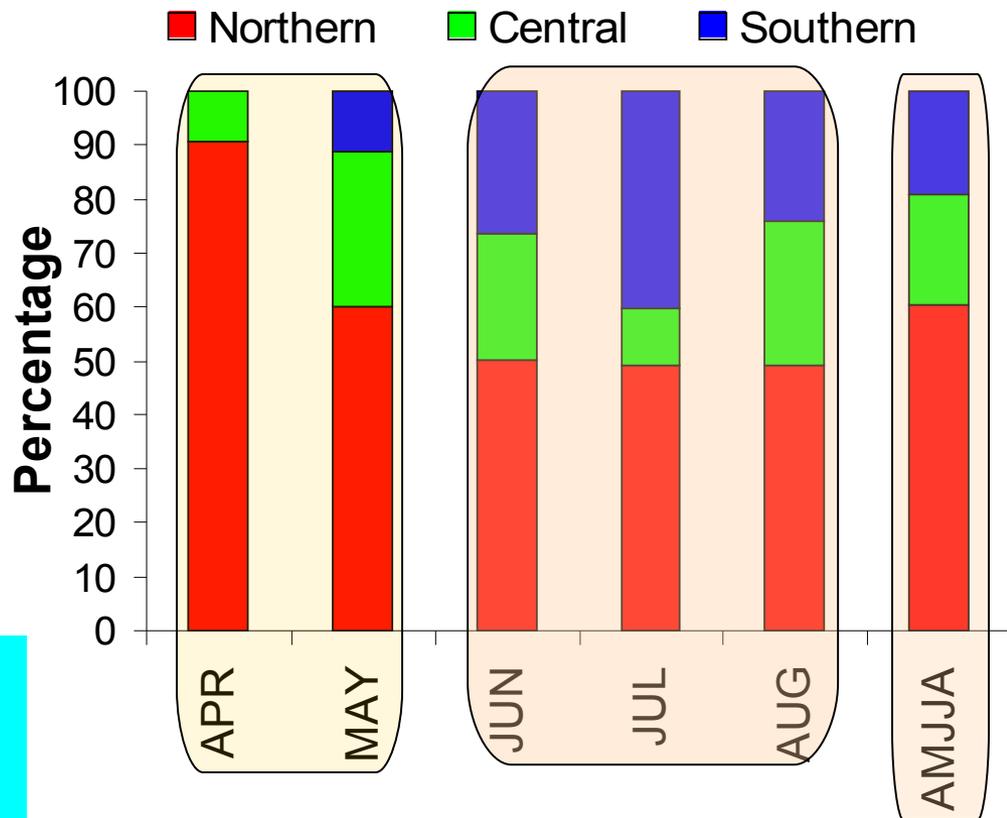
(2000-2003)



Growth and Movement of Convective Systems ?

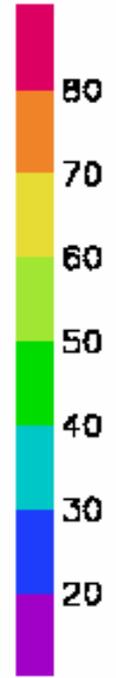
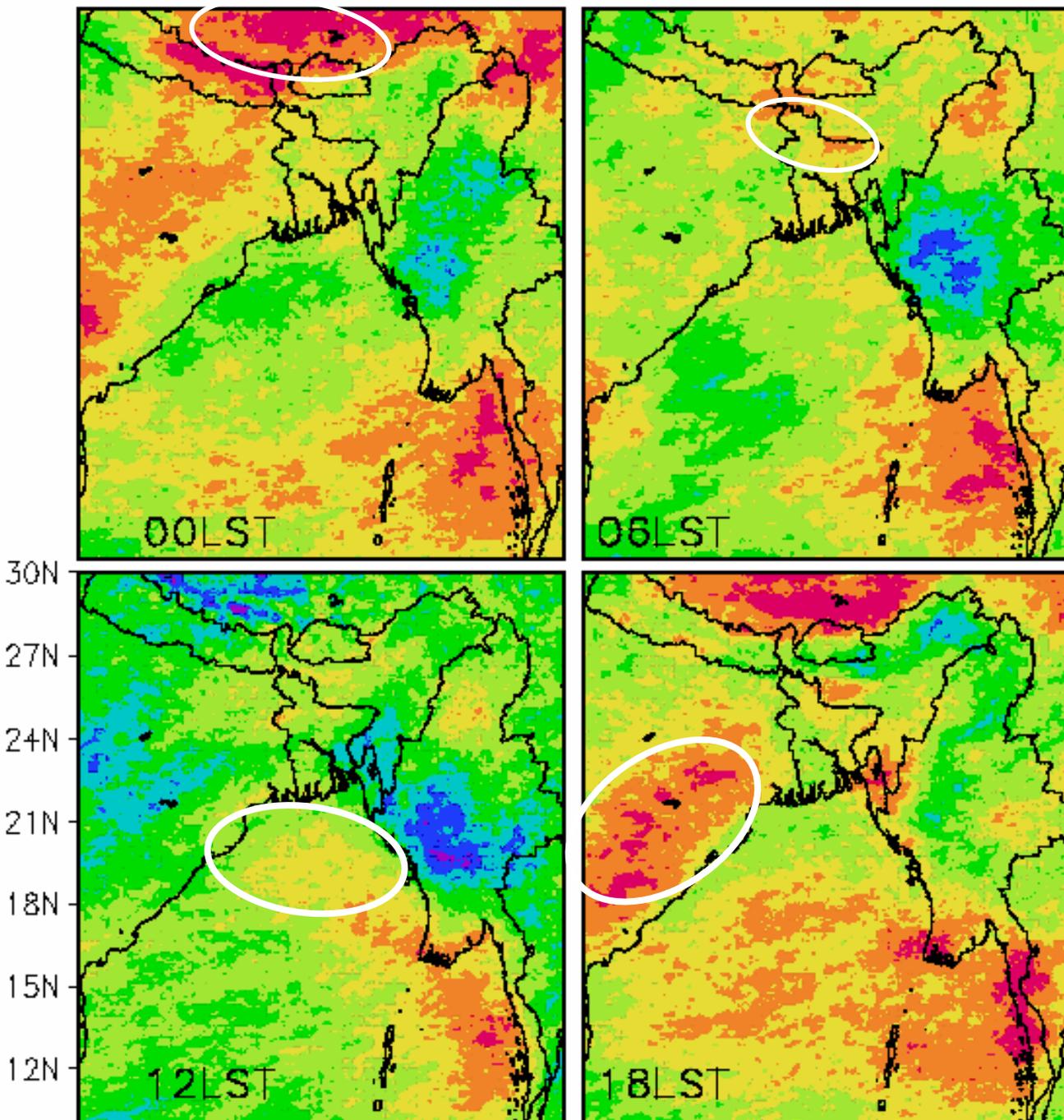


BMD Radar 2000



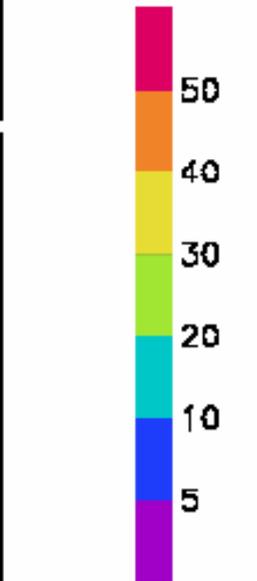
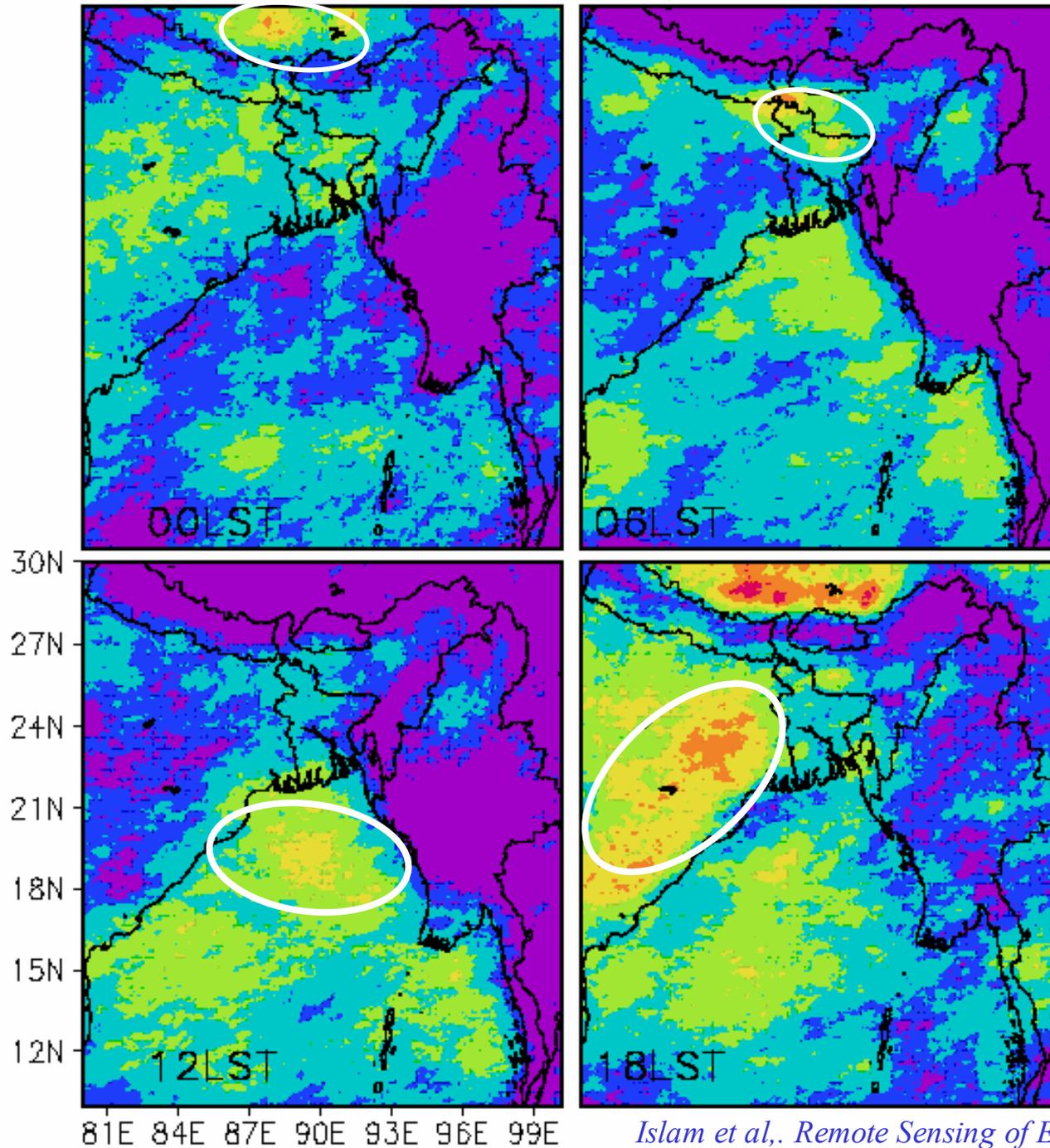
GMS 5

Frequency of Occurrence of low-level Convection Systems

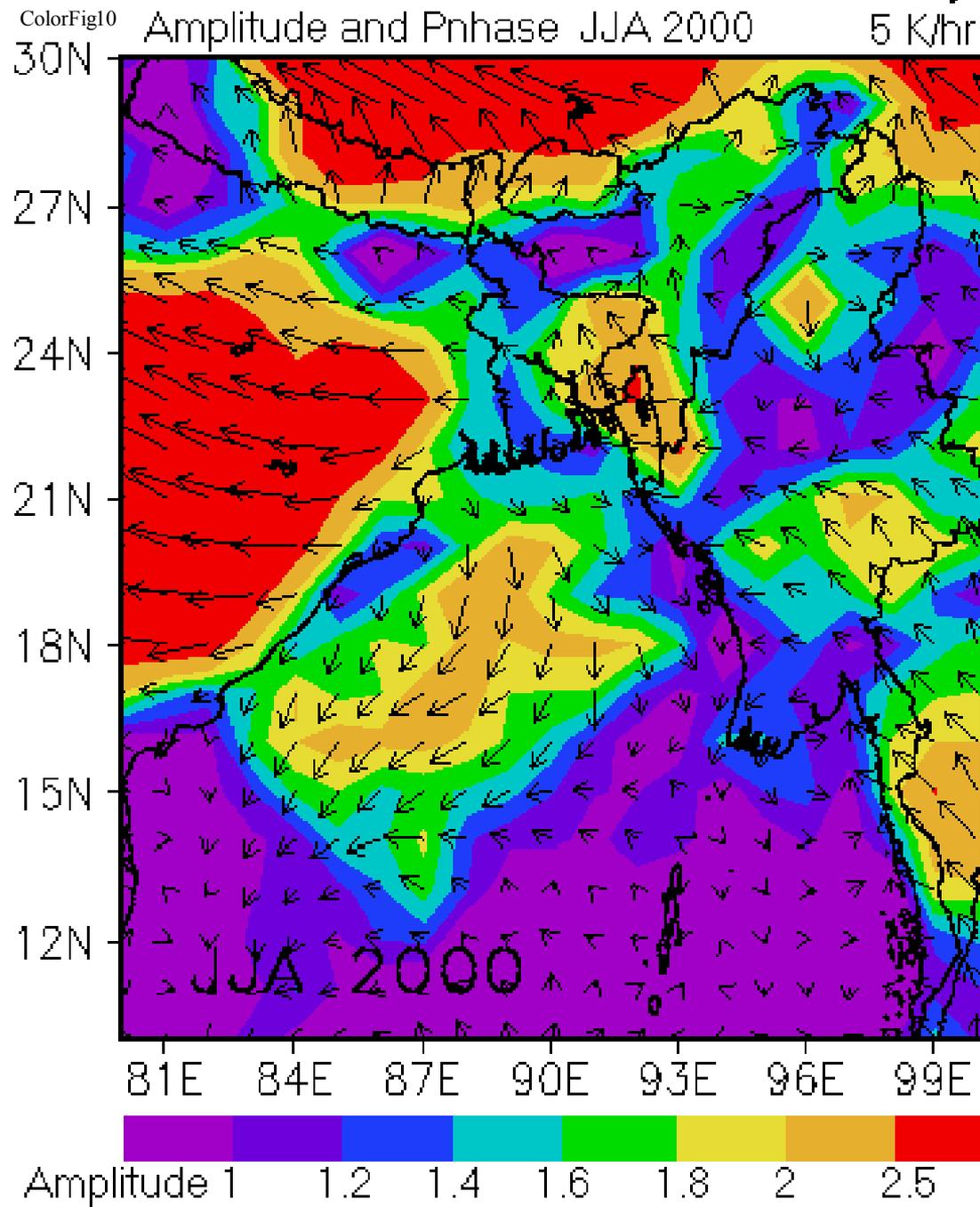


GMS 5

Frequency of Occurrence of
**high-level
Convection
Systems**

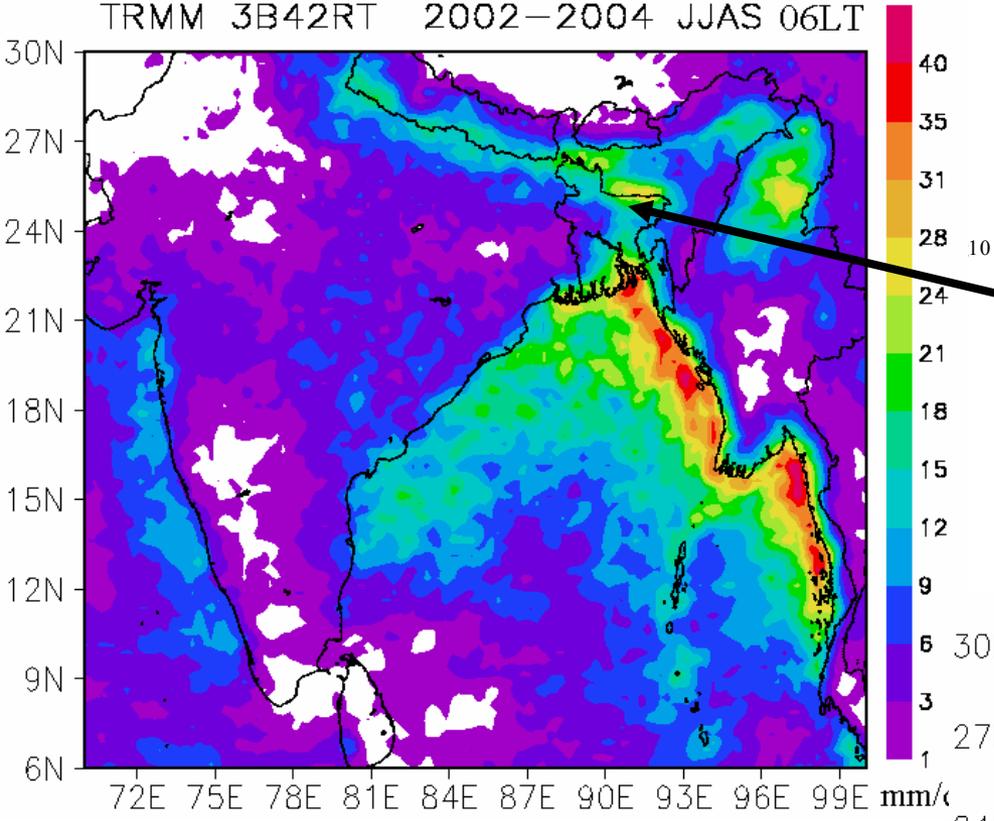


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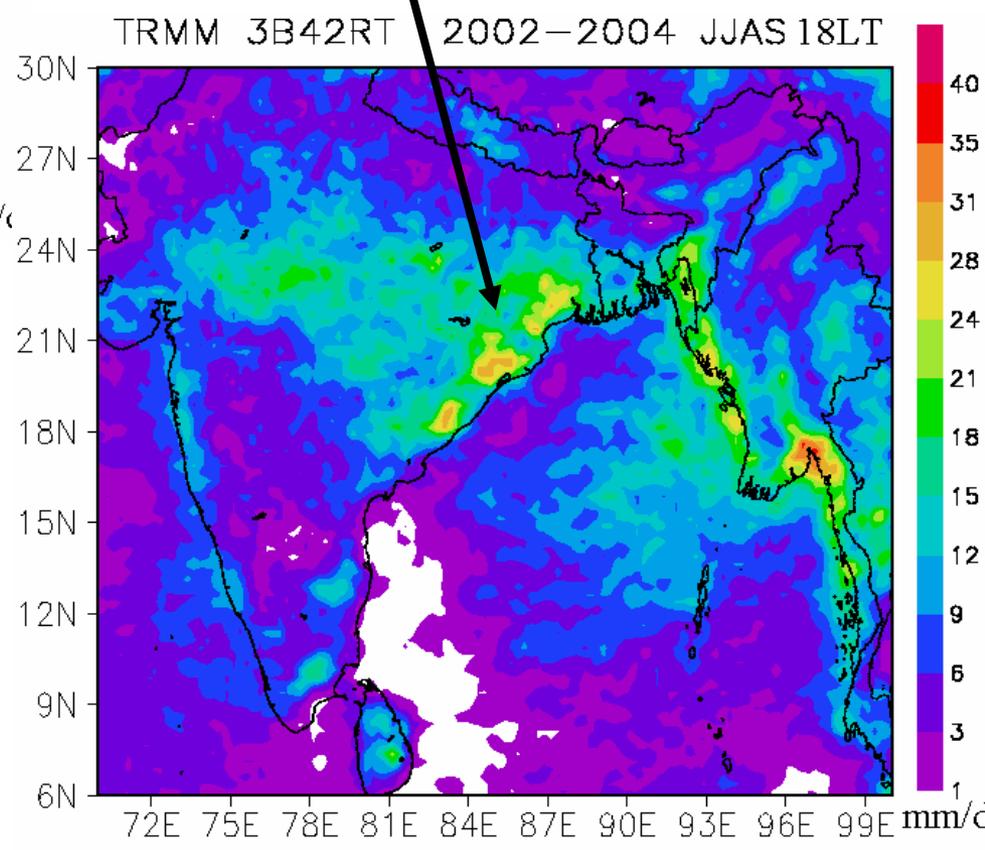
Diurnal Variation of Rainfall ?

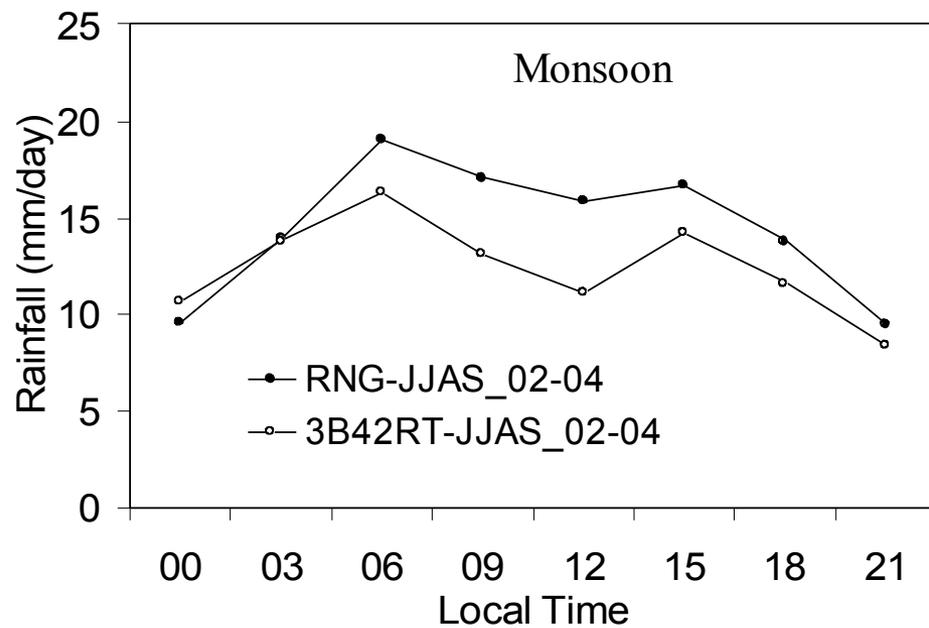
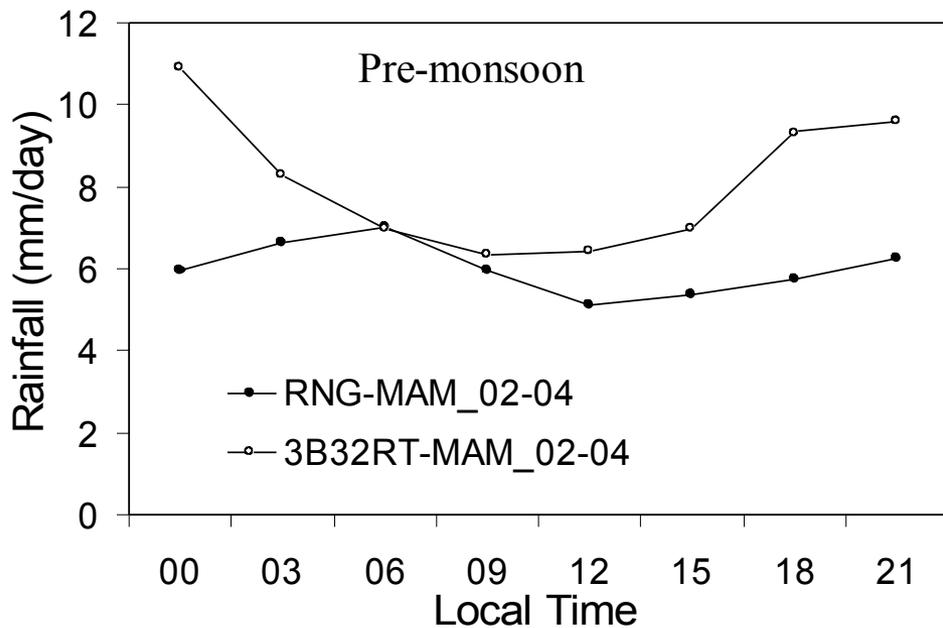
TRMM 3B42RT



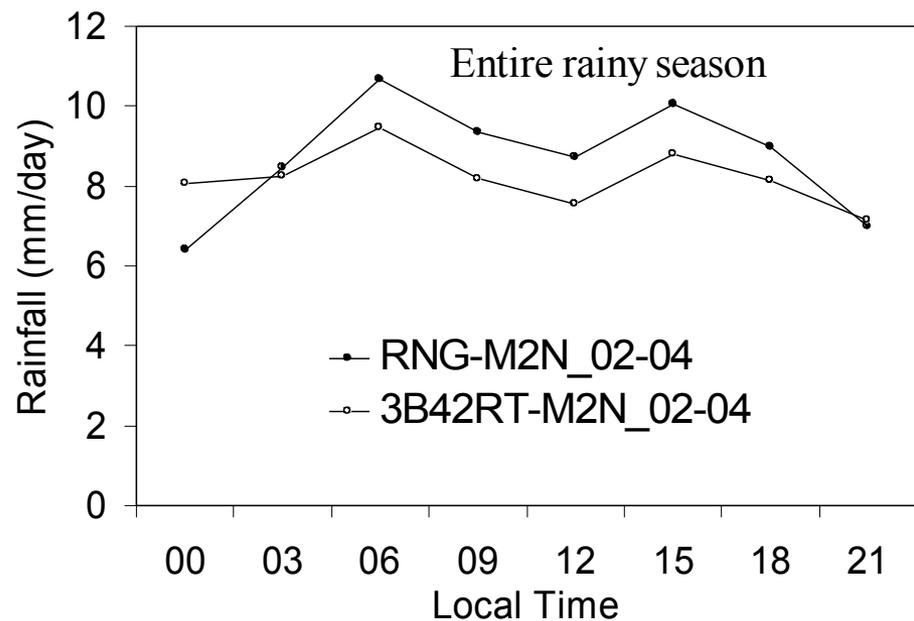
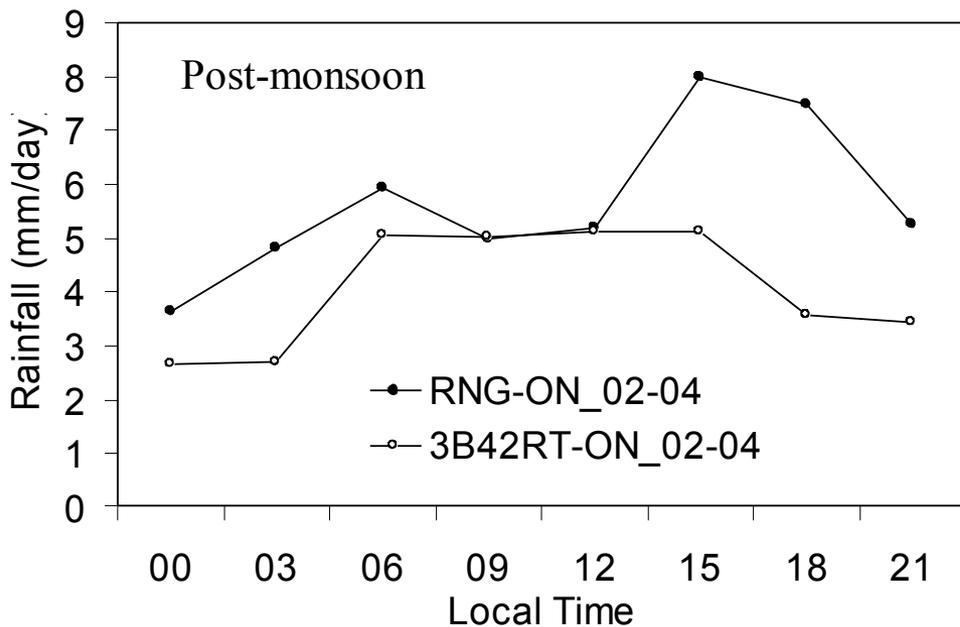
06LST

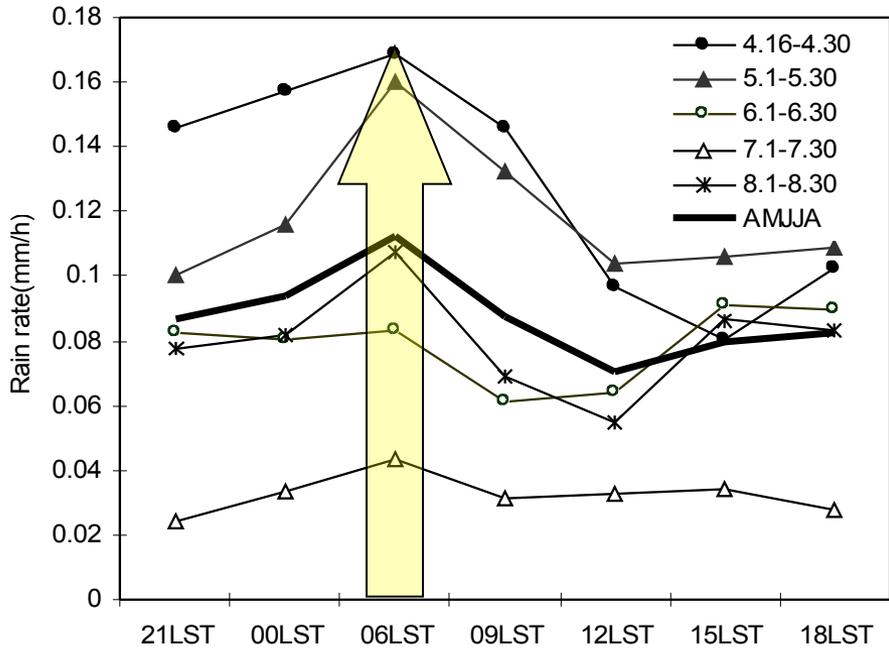
18LST



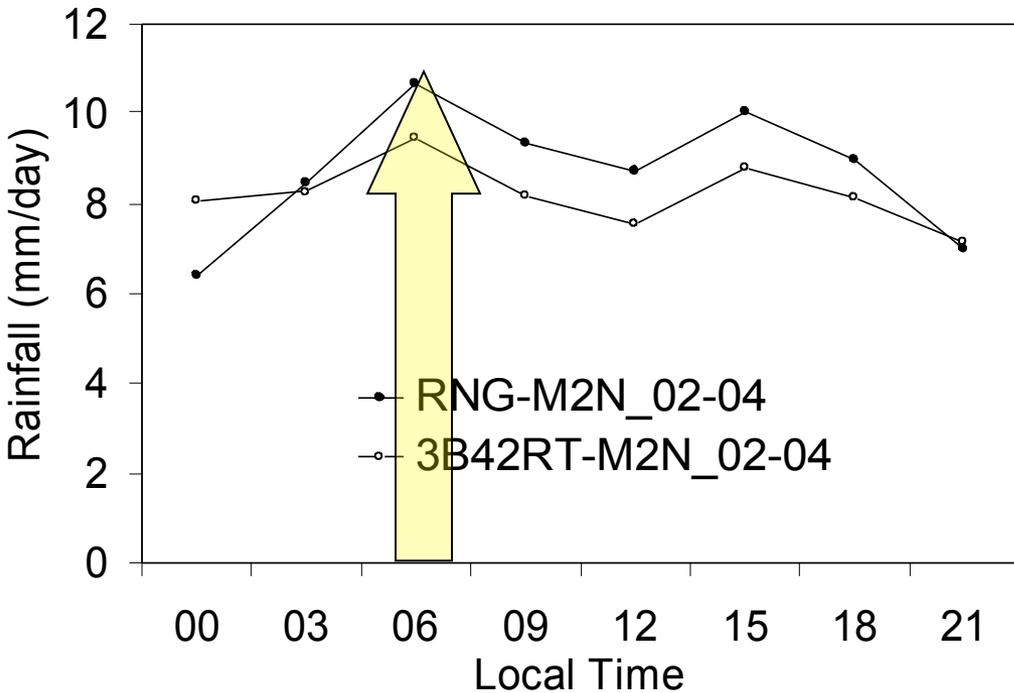


Rain-gauge and TRMM 3B42RT





Radar



Rain-gauge and TRMM 3B42RT

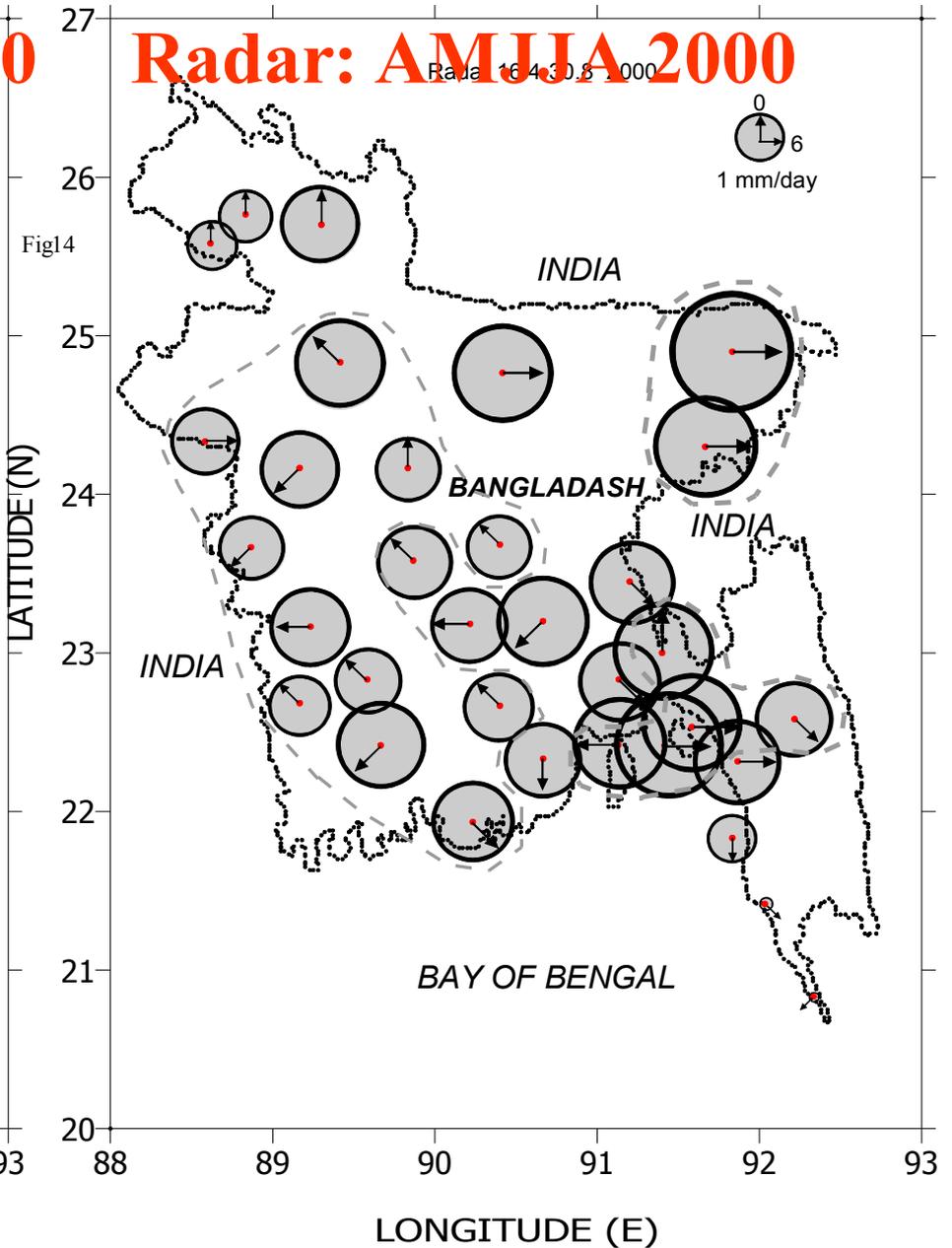
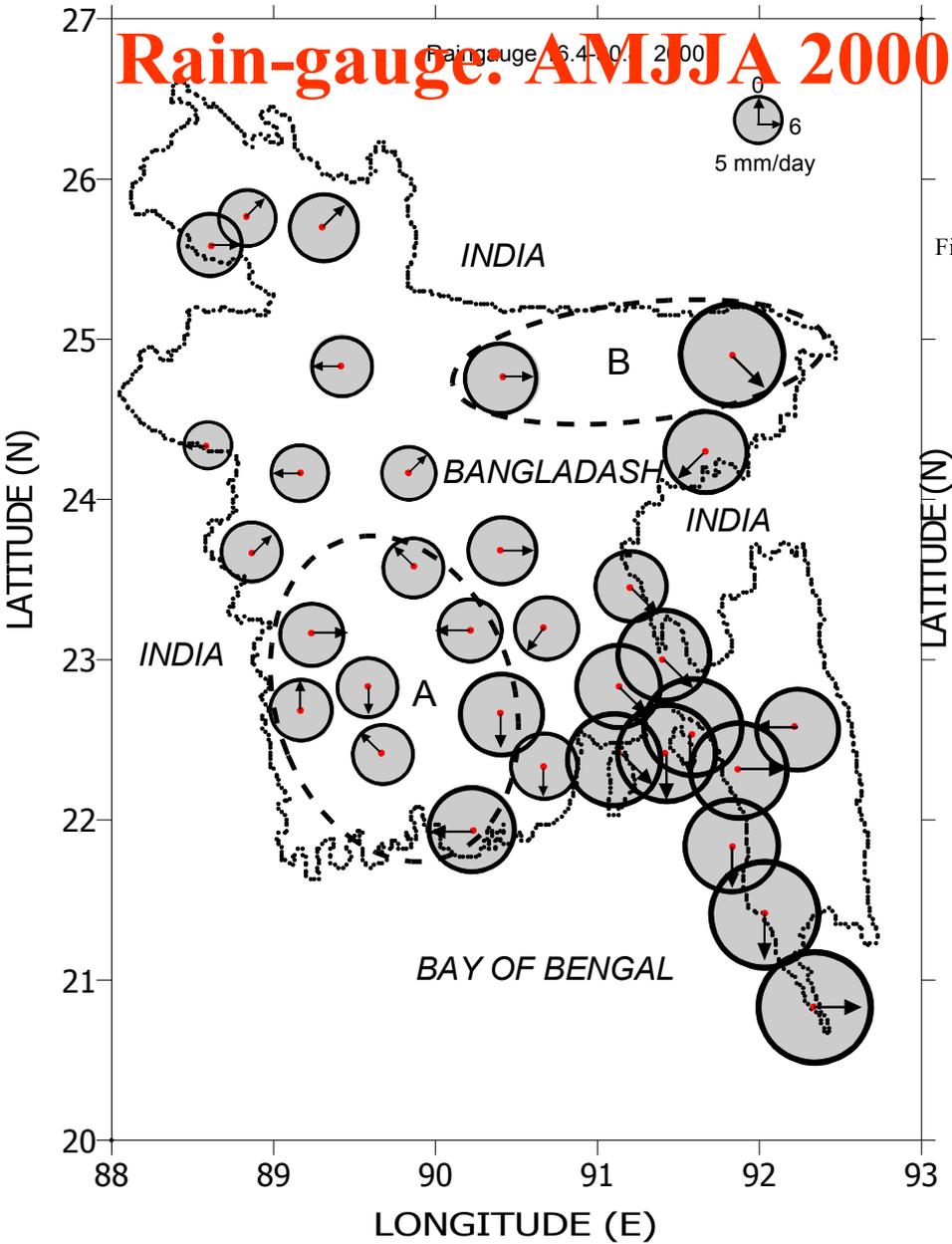


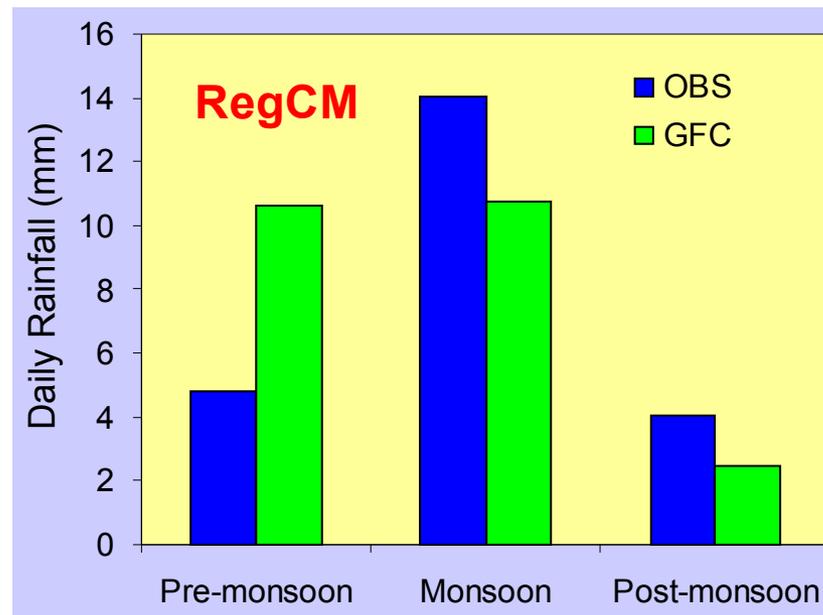
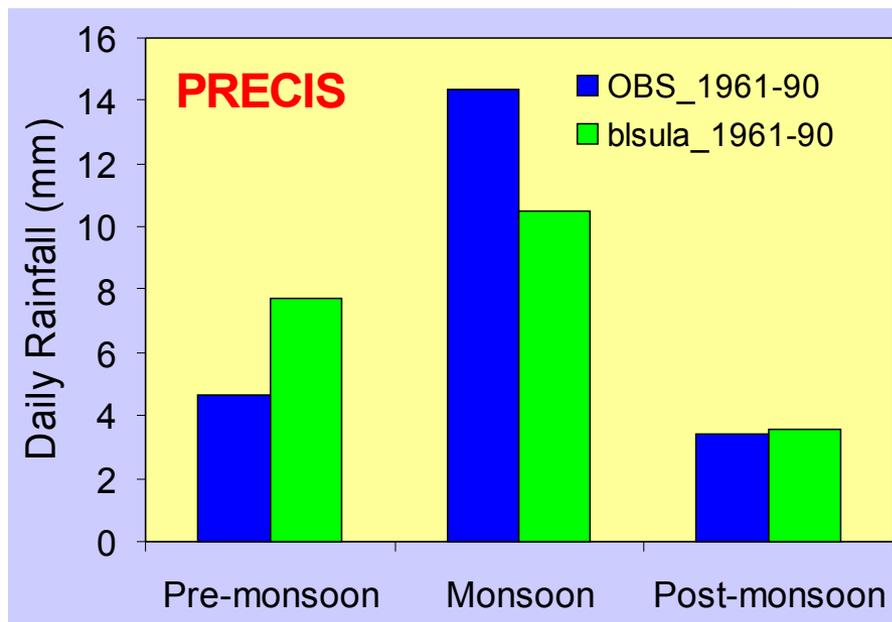
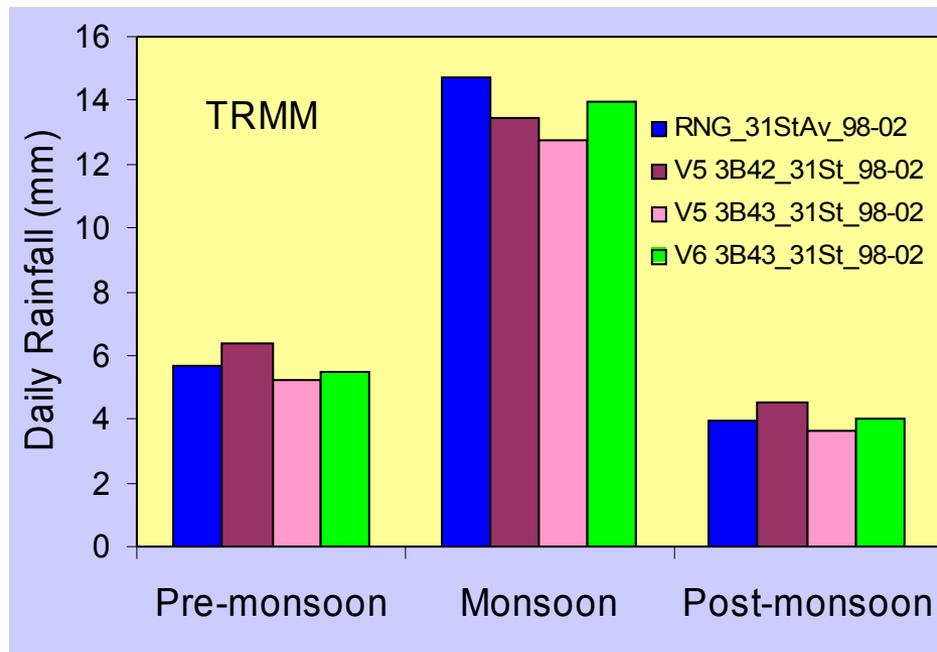
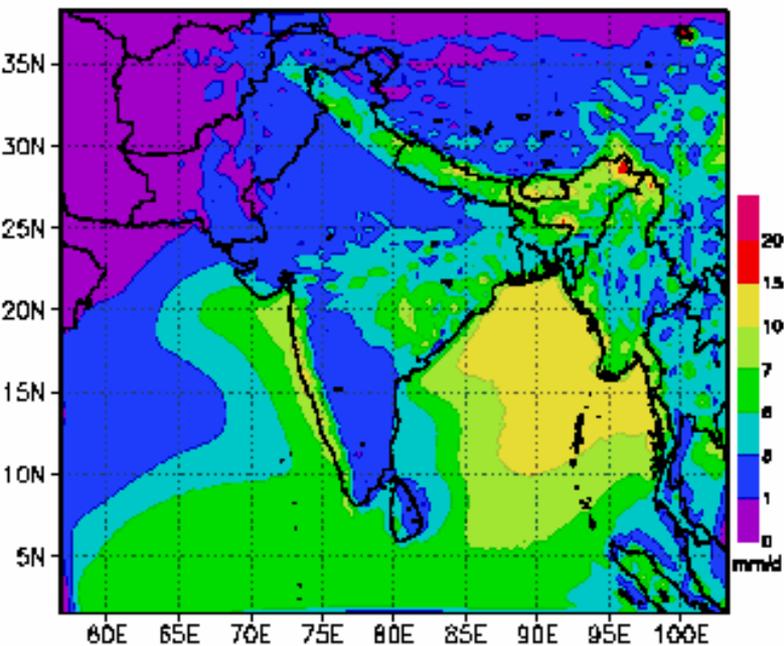
Fig. 14. Rain-gauge estimated daily rainfall averaged for 16 April to 30 August 2000 in Bangladesh. Same as Fig. 14 except for radar estimated rainfall at different rain-gauge locations of Bangladesh.

The area of a circle is proportional to the amount of the daily rainfall.

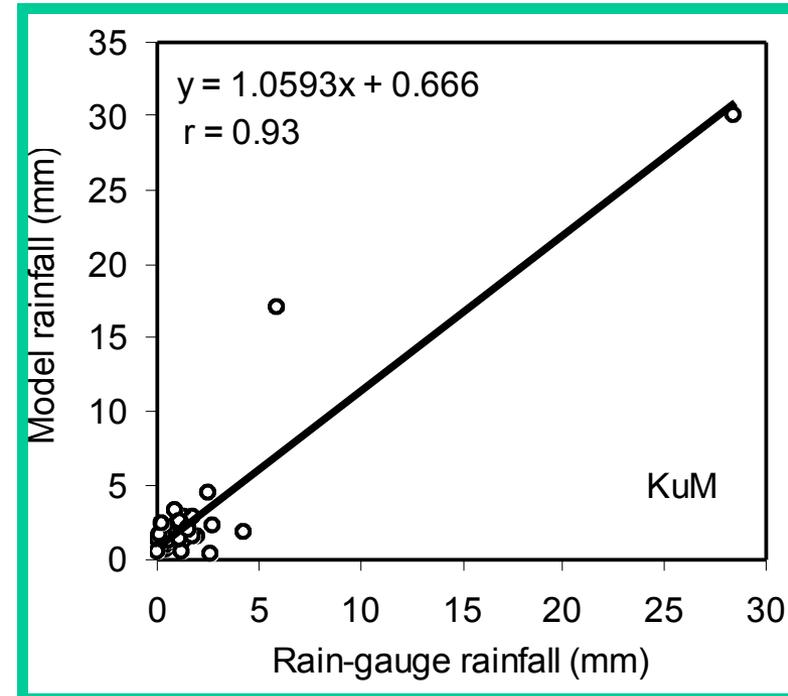
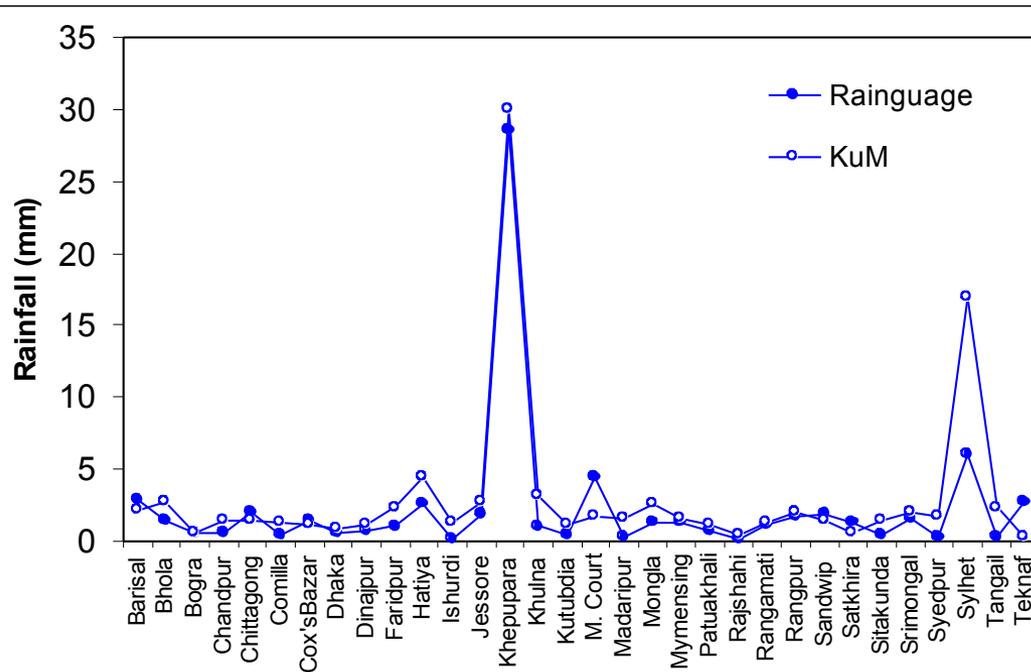
Time of the maximum rainfall is represented in the vector. Pointing to the north, east, south and west mean 00LST, 06LST, 12LST and 18LST respectively.

Seasonal RAINFALL Forecasting ?

blsula_RF1961-90



MM5 Model Result



MM5 may be one of the tools in simulating surface rain in and around Bangladesh. Simulated rainfall may be used as the input of surface water model for lead time flood forecasting in Bangladesh.

REMARKS

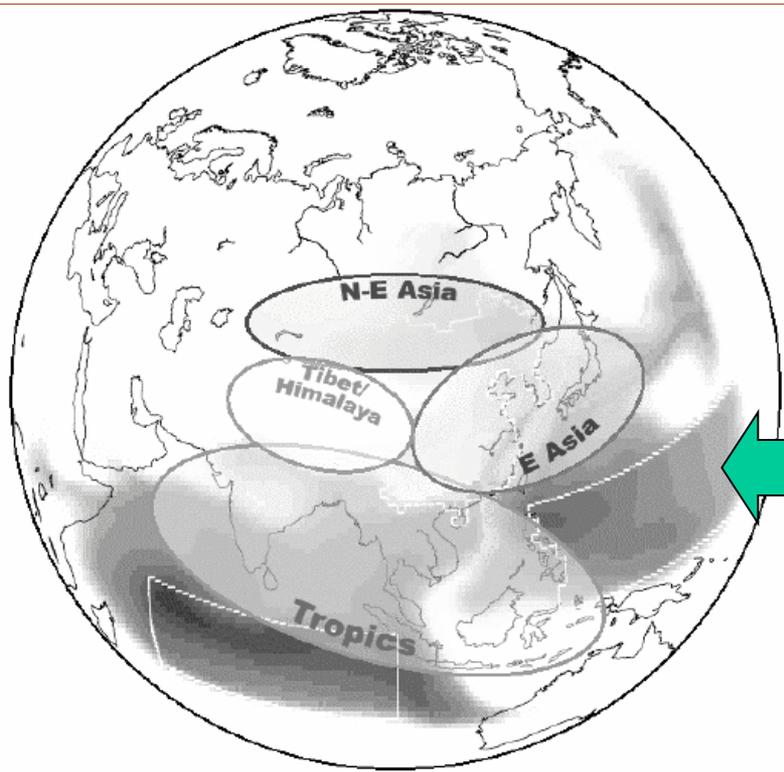
Radar DATA for year 2000 is analyzed, Long-term data analysis is needed for final conclusion and to go for Application.

For flood monitoring and flood forecasting, Continuous radar observation, TRMM/GPM data, Upper catchments rainfall information are necessary. Hope MAHASRI is the good platform to provide these facilities.

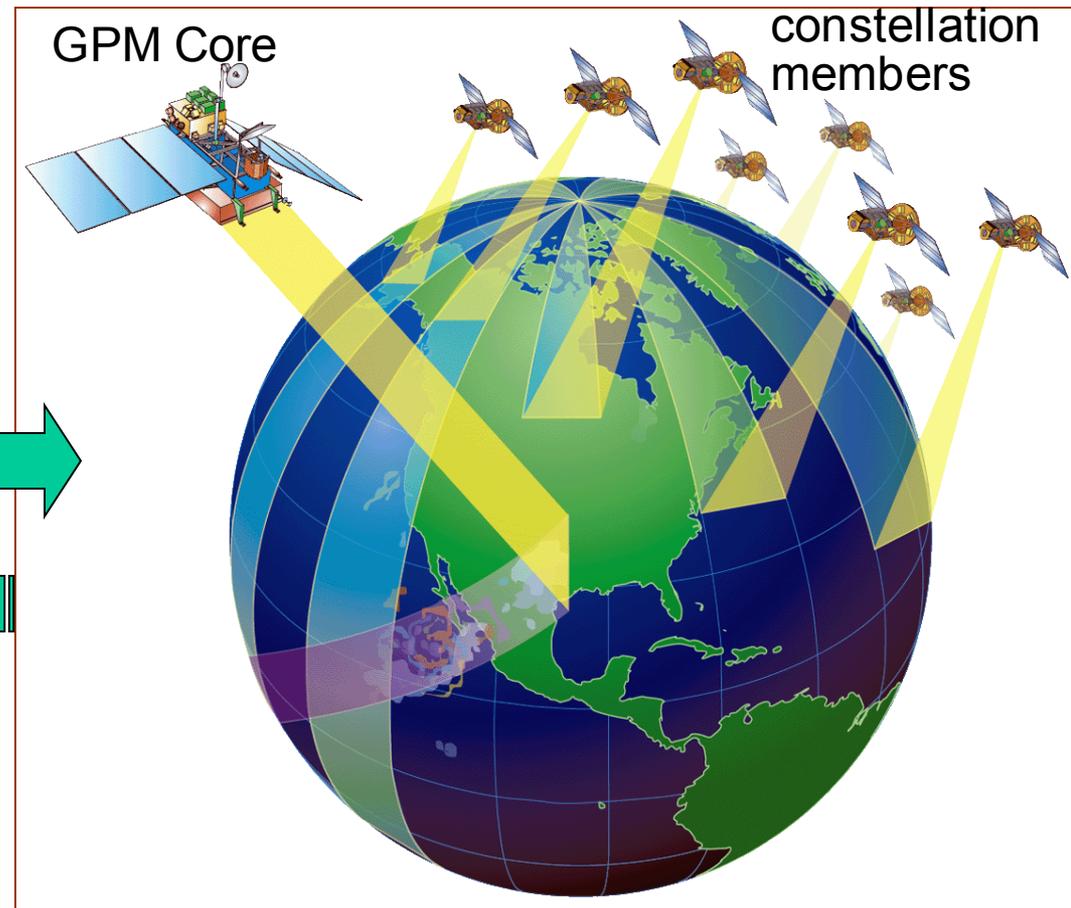
Only one case is analyzed by using Mesoscale model. Analyses of many cases and proper parameterization in RCMs through MAHASRI observational data may be helpful to prepare the flood forecasting tool.

Flood/ Flash flood is common in Bangladesh. MAHASRI observational data may be helpful to prepare the application tool in flood monitoring and forecasting.

**MAHASRI observational data + Satellite
(TRMM/GPM) + Simulation
can solve the problems in Monsoon Asia**



MAHASRI



TRMM/ GPM ERA

OBSERVATORIES OF BMD

○ LOCATION OF FIRST CLASS OBSERVATORY

● Proposed FIRST CLASS OBSERVATORY

★ LOCATION OF PBO

○ LOCATION OF RAWINSONDE OBSERVATORIES

