APCN Meeting 2004

9 – 12 November 2004

Busan, Republic of Korea

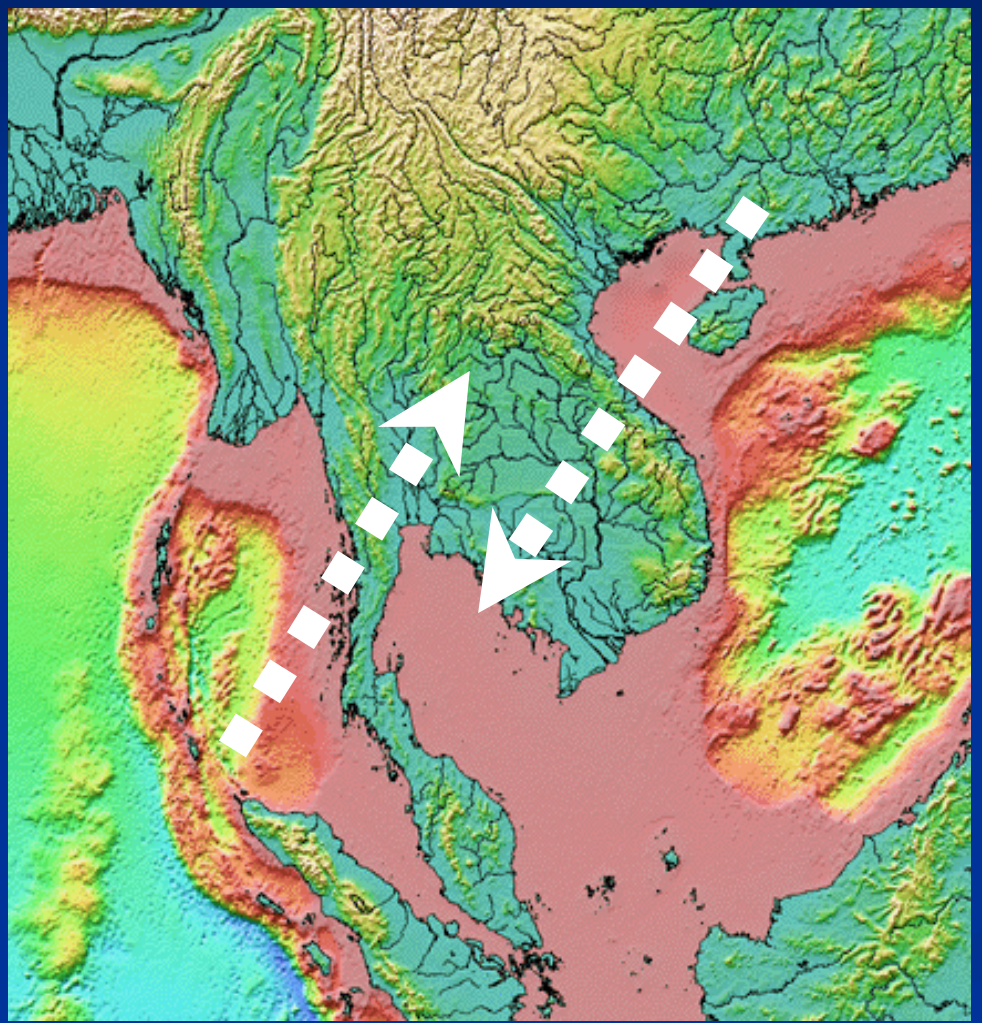
Application of global MM5 for 10 day Weather Prediction in Thailand

Boonlert Archevarahuprok

OUTLINE

- Influence of SW/NE Monsoon
- TMD Weather Forecast
- TMD LRWF Issues
- global MM5
- Conclusion

Influence of SW / NE Monsoon



- SouthWest Moonson
  mid May
  ITCZ
- NorthEast Monsoon
  mid October

TMD Weather Forecast

- SRWF

  beyond 12-hours and up to 3-days

- MRWF

  beyond 3-days and up to 7-days

- LRWF

  longer than 7-days ahead

TMD LRWF Issues

- Monthly Weather Outlook

  publish every month before actual weather will be take place
- Seasonal Weather Outlook

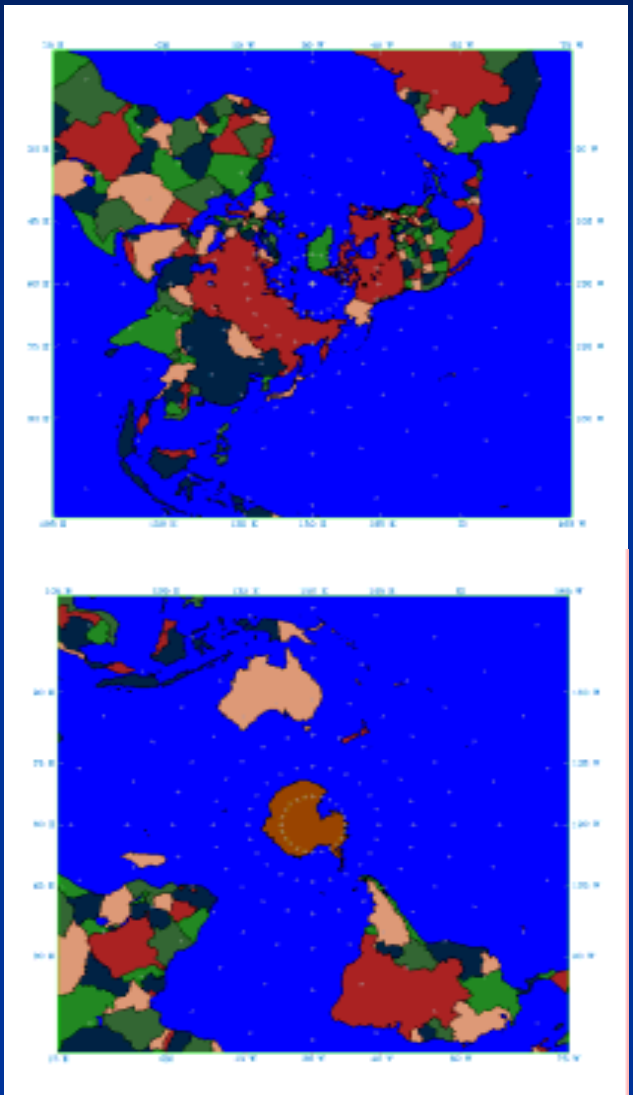
rainy	Apr.	mid-May – mid-October
winter	Sep.	mid-October – mid-February
summer	Jan.	mid-February – mid-May

global MM5

- An Innovation of Medium Range Weather Forecast by using Mesoscale Model MM5

- Working Group

global MM5

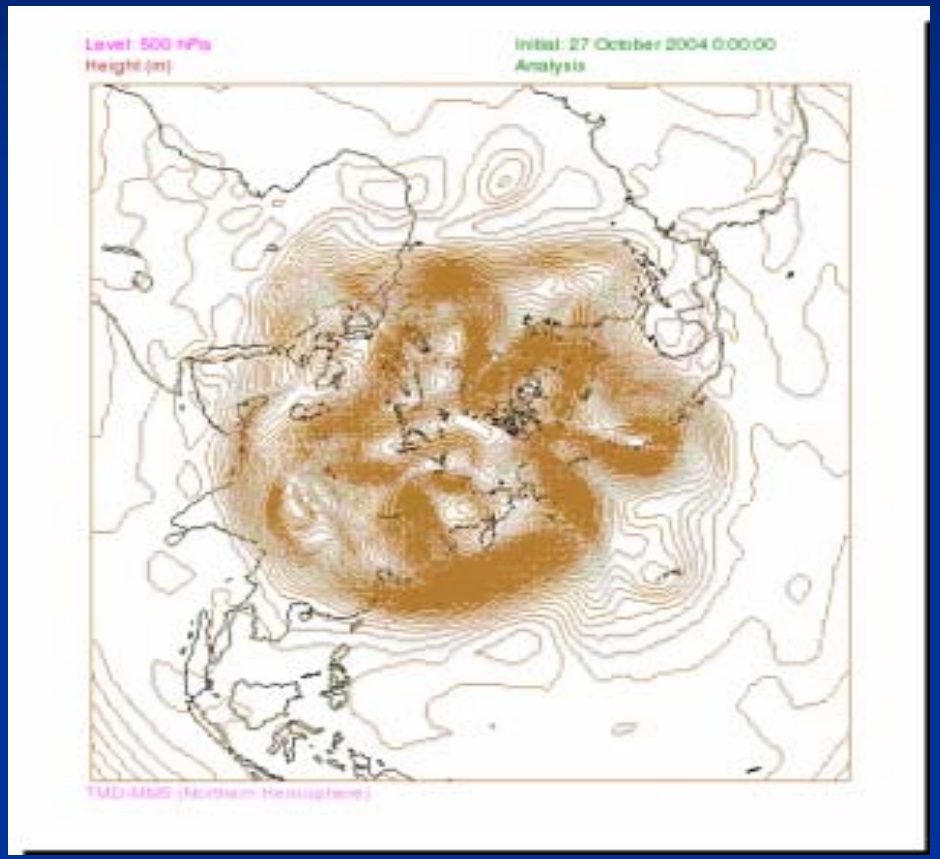


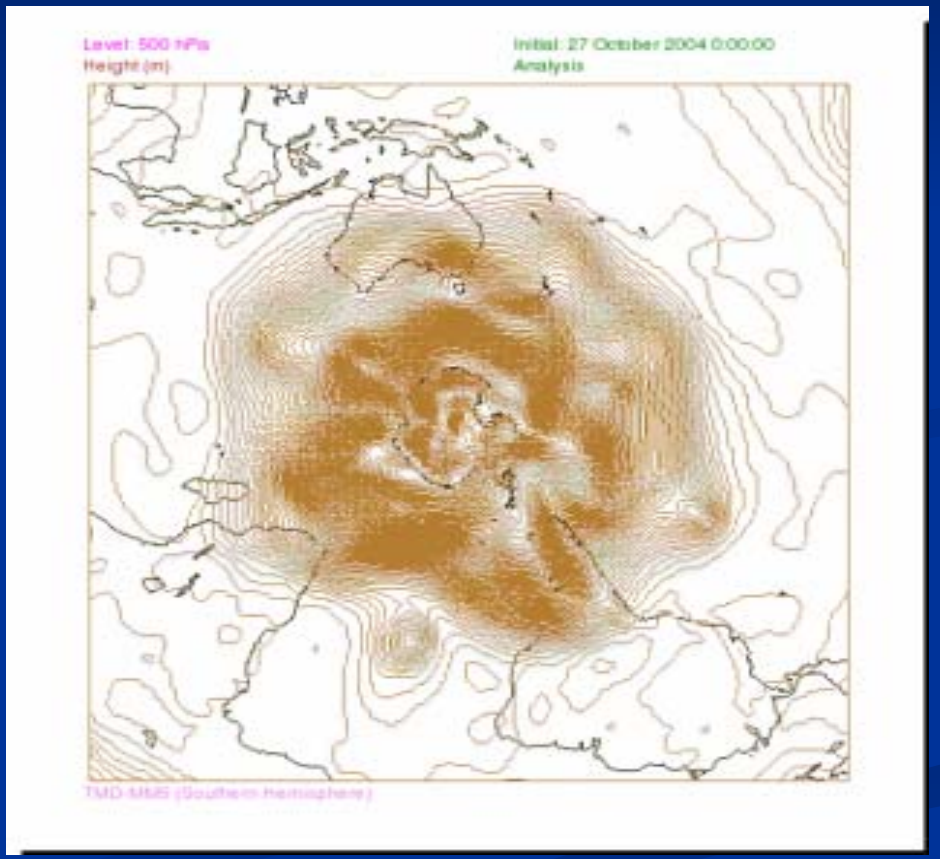
- 210 x 210 grid point
- 23 levels
- 120 km. grid distance
- time step 210 seconds
- grell cuumulus
- simple-ice microphysics
- MRF PBL
- cloud radiation
- 5-layer soil temperature

global MM5

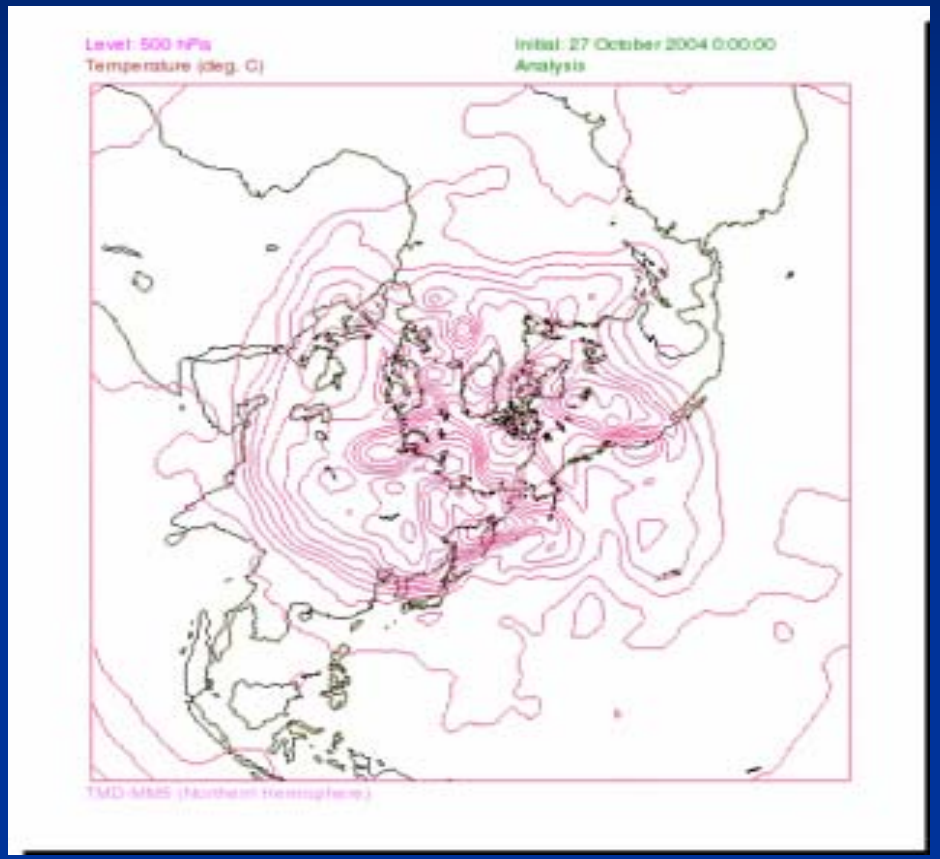
- 4-node Linux Cluster
  dual AMD opteron 1.6 GHz
- NCEP Initial data
- 240-hour Prediction
- 4 hours and 30 minutes CPU time
- Vis5D & GrADS

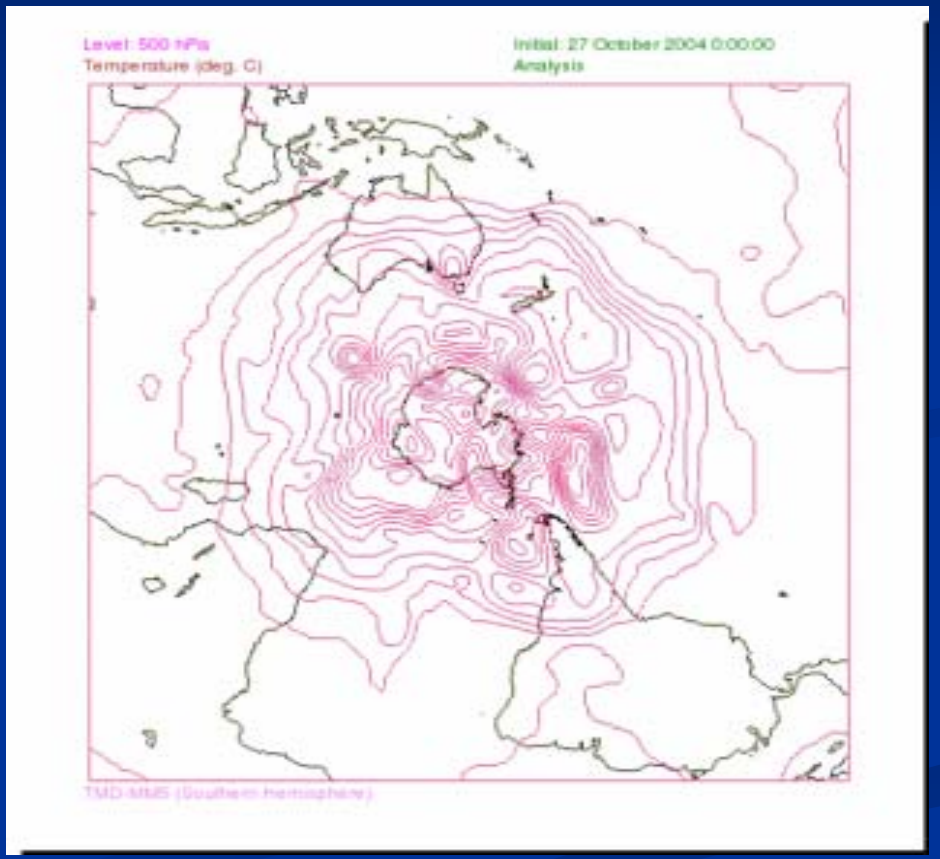
global MM5


Level: 500 hPa
Height (m)
Initial: 27 October 2004 0:00:00
Analysis

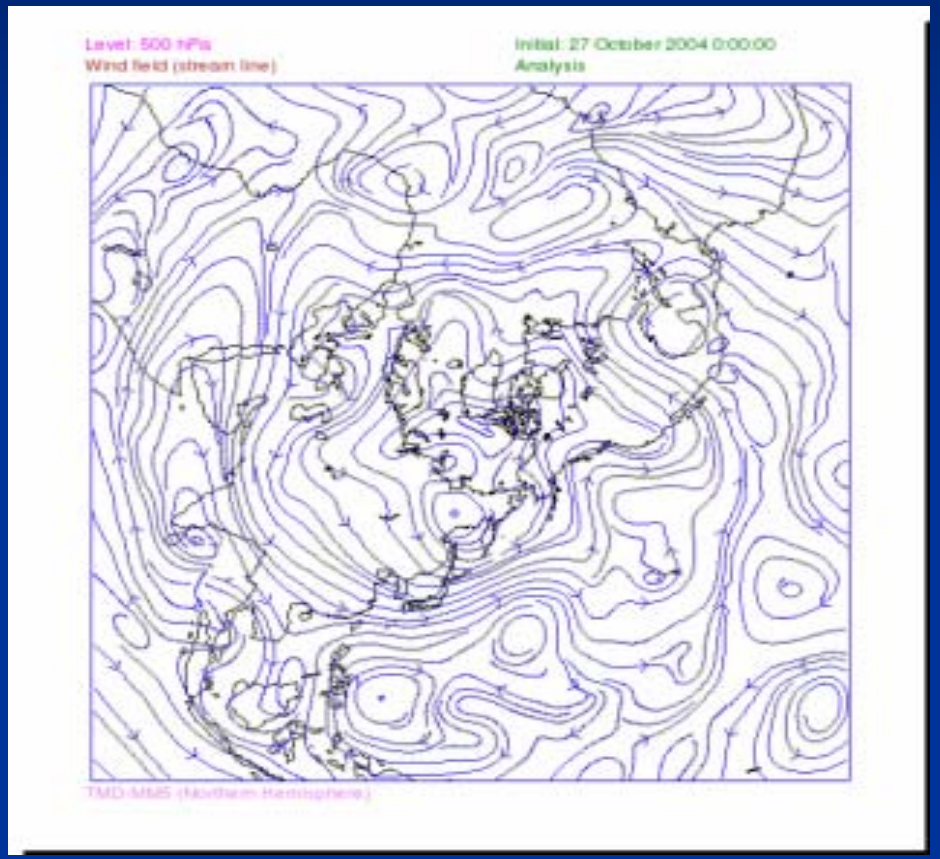

Level: 500 hPa
Height (m)
Initial: 27 October 2004 0:00:00
Analysis

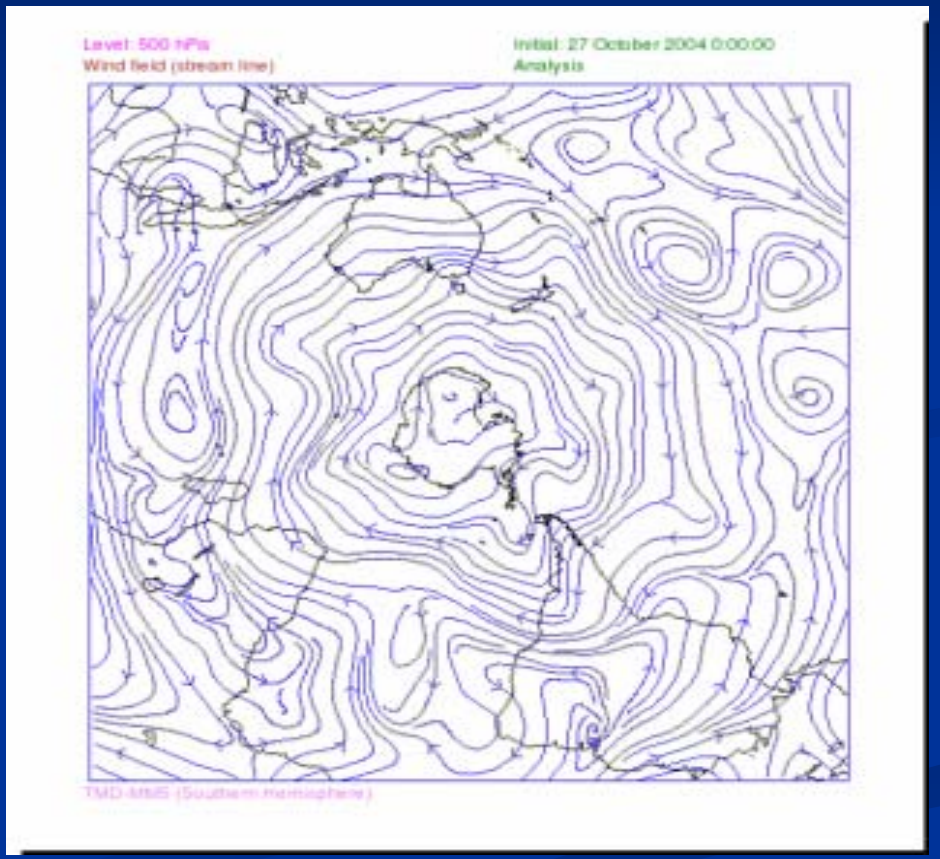
global MM5


Level: 500 hPa
Temperature (deg. C)
Initial: 27 October 2004 0:00:00
Analysis


Level: 500 hPa
Temperature (deg. C)
Initial: 27 October 2004 0:00:00
Analysis

global MM5


Level: 500 hPa
Wind field (stream line)
Initial: 27 October 2004 0:00:00
Analysis


Level: 500 hPa
Wind field (stream line)
Initial: 27 October 2004 0:00:00
Analysis

Conclusion

- The techniques, methodology and process in preparing a LRWF model are being investigated
- The ability of the global MM5 model can be adapted for 10-day LRWF for Thailand
- Future, after 11-node Linux cluster system, plans for forecast one and three month ahead