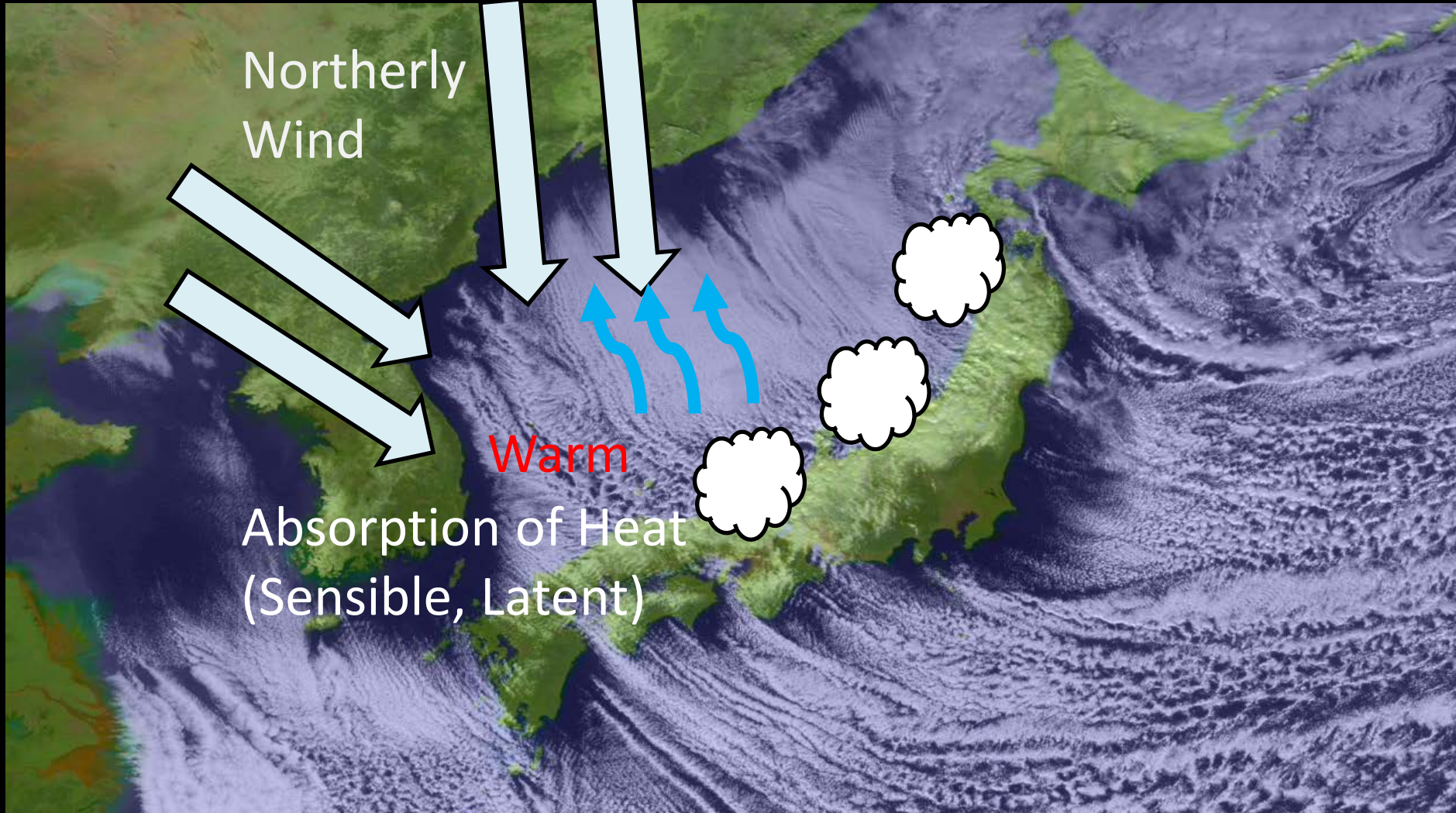


Characteristics of Rainfall and Snowfall on the Japan Sea Coastal Region during the Winter Monsoon Season

Members

Kazu. Yasunaga (Univ. of Toyama),
Noriyuki Nishi (Fukuoka Univ.)

Winter monsoon over the sea of Jpn

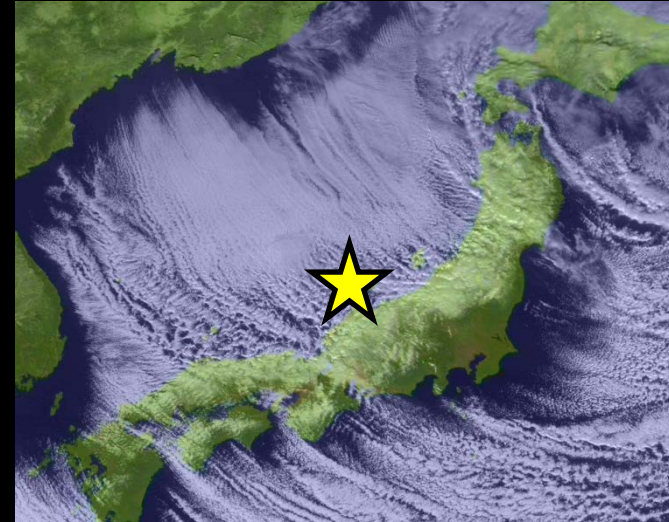


A lot of precipitation occurs along the Japan sea coast region during the winter.

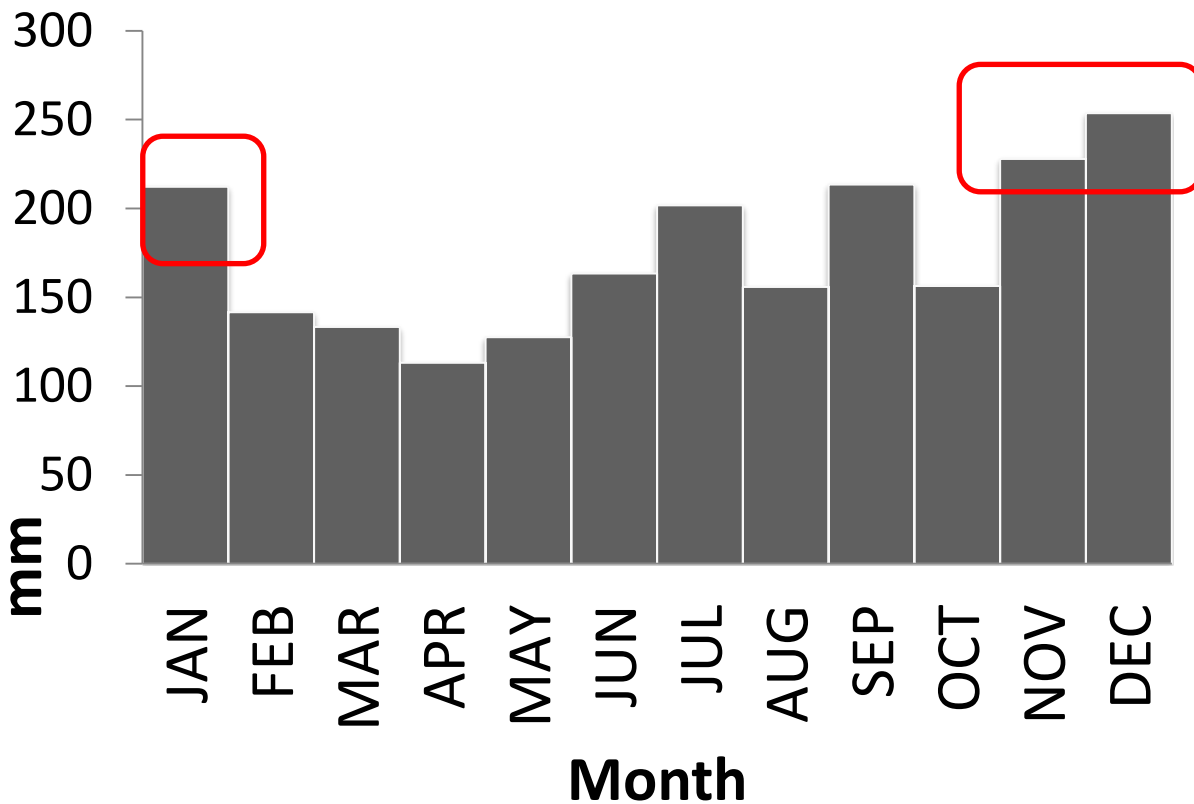
Importance of winter precipitation

Good : The most water resources during winter monsoon season.

Bad : People along the Jpn. sea coast suffer from heavy snowfall disaster



Precipitation Amounts at Wajima



Precipitation Pattern

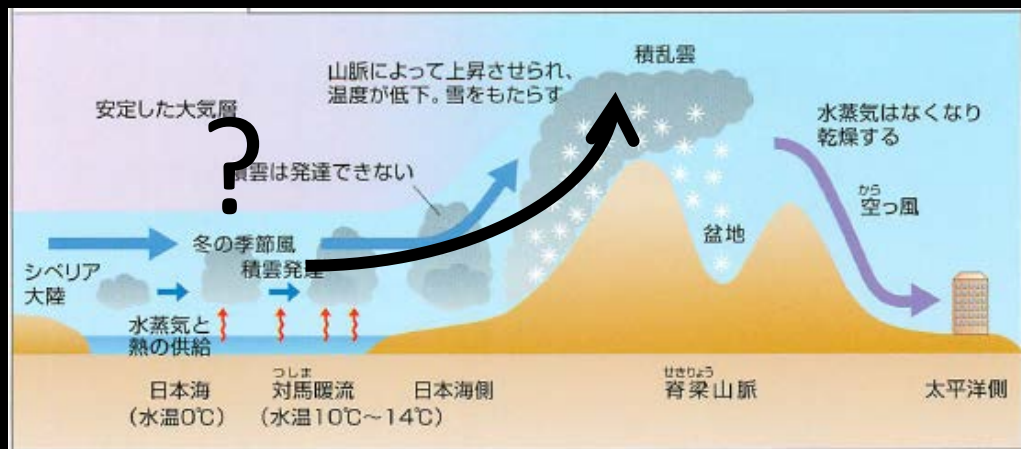
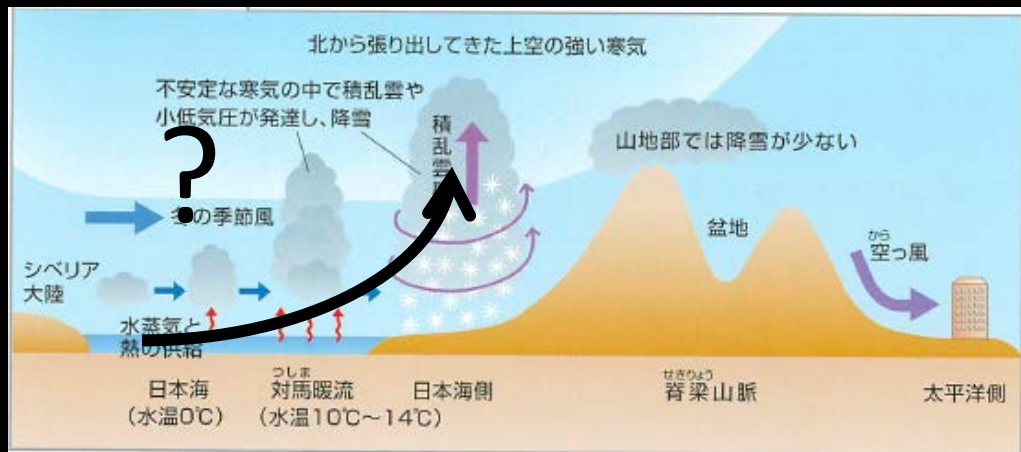
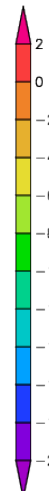
Ra_AMeDAS (DJF, 2006-2013)

DJF mean



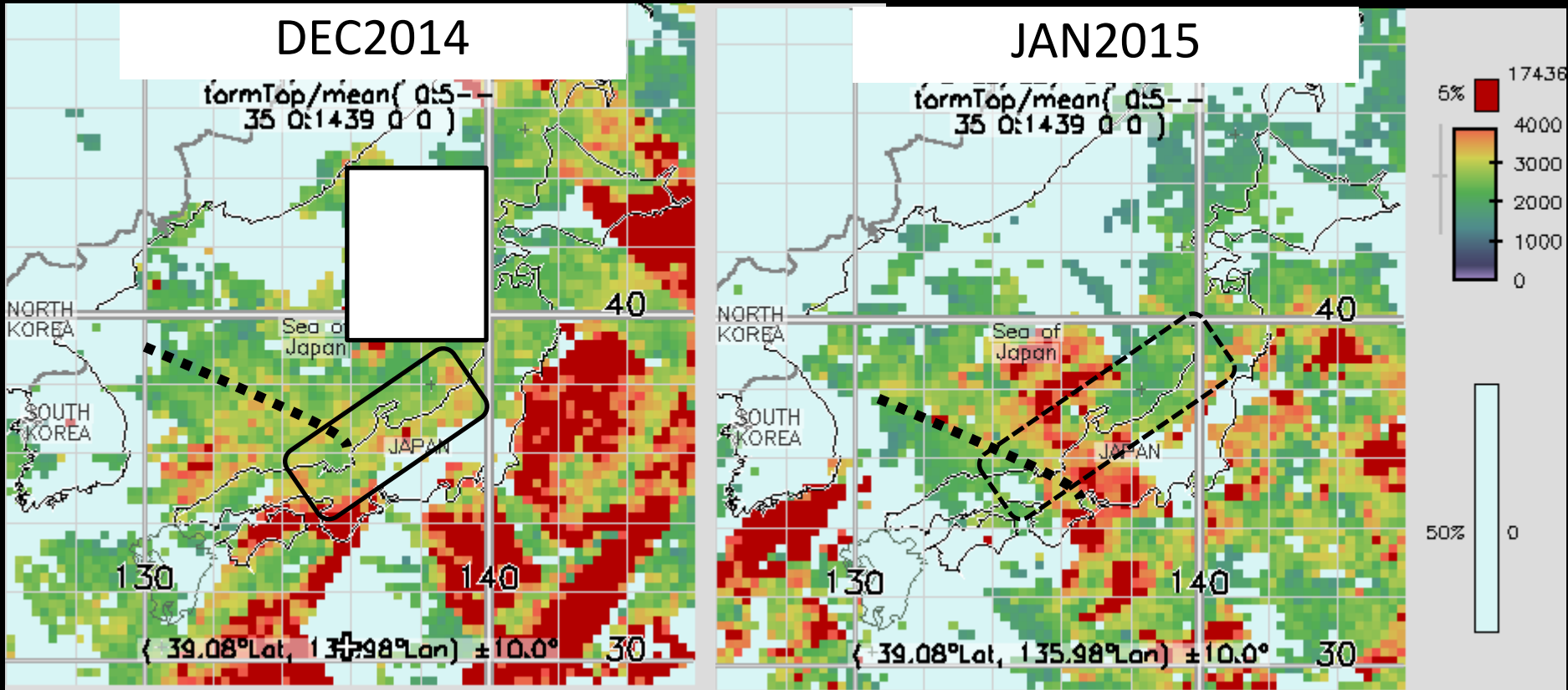
[mm/day]

Tbb Mean (DJF, 1999-2008)



GPM: Direct Observation

Storm Height (Ku)

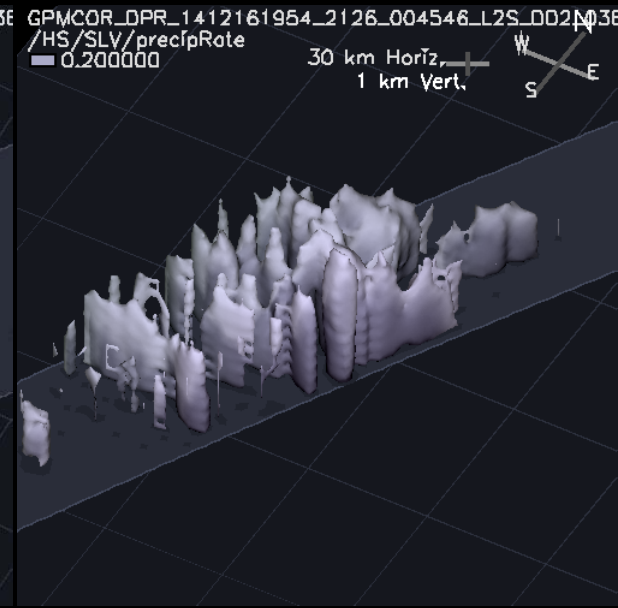
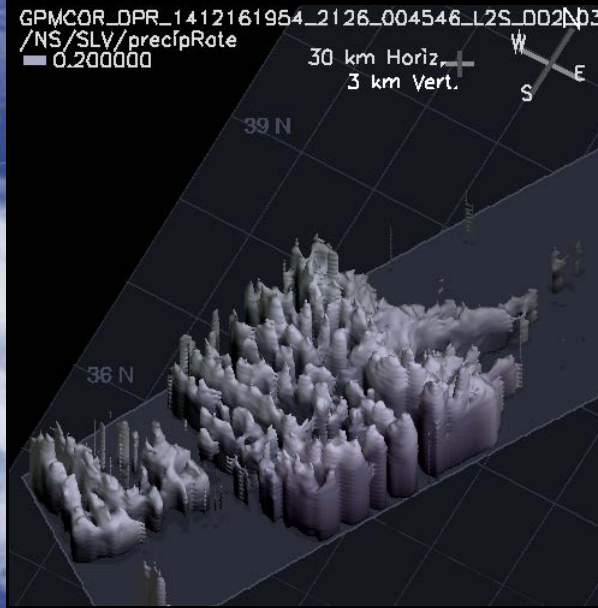
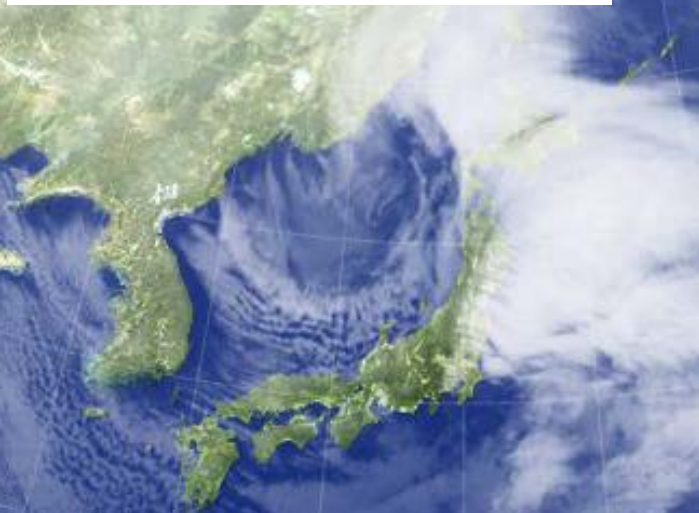


JPCZ?

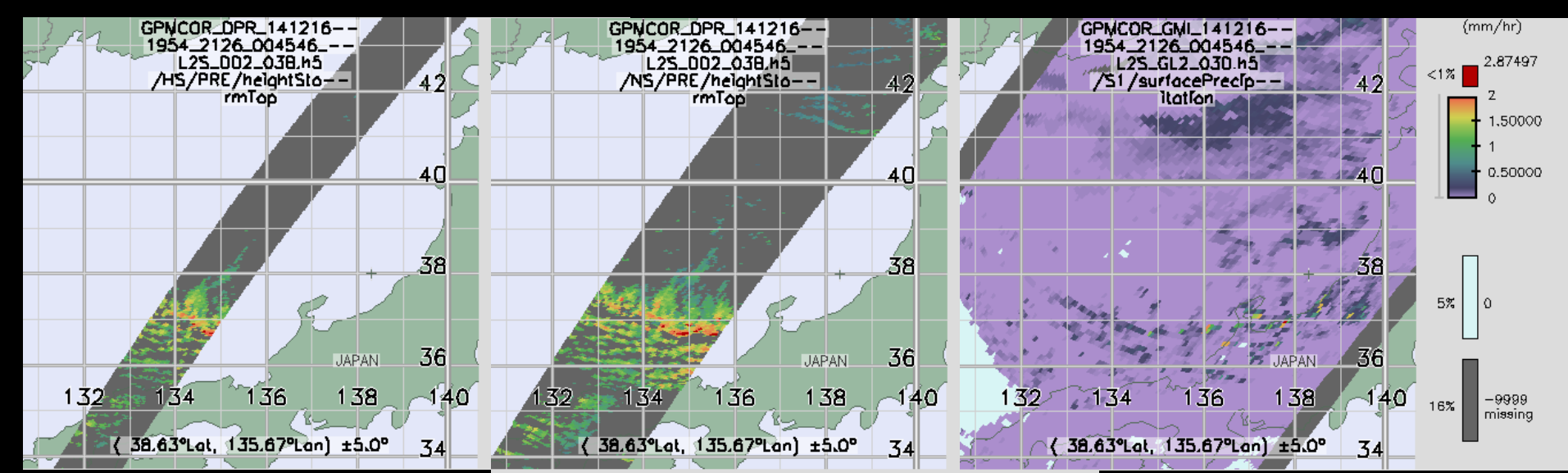
-> Case study

Convection Development from Ocean to Land ?

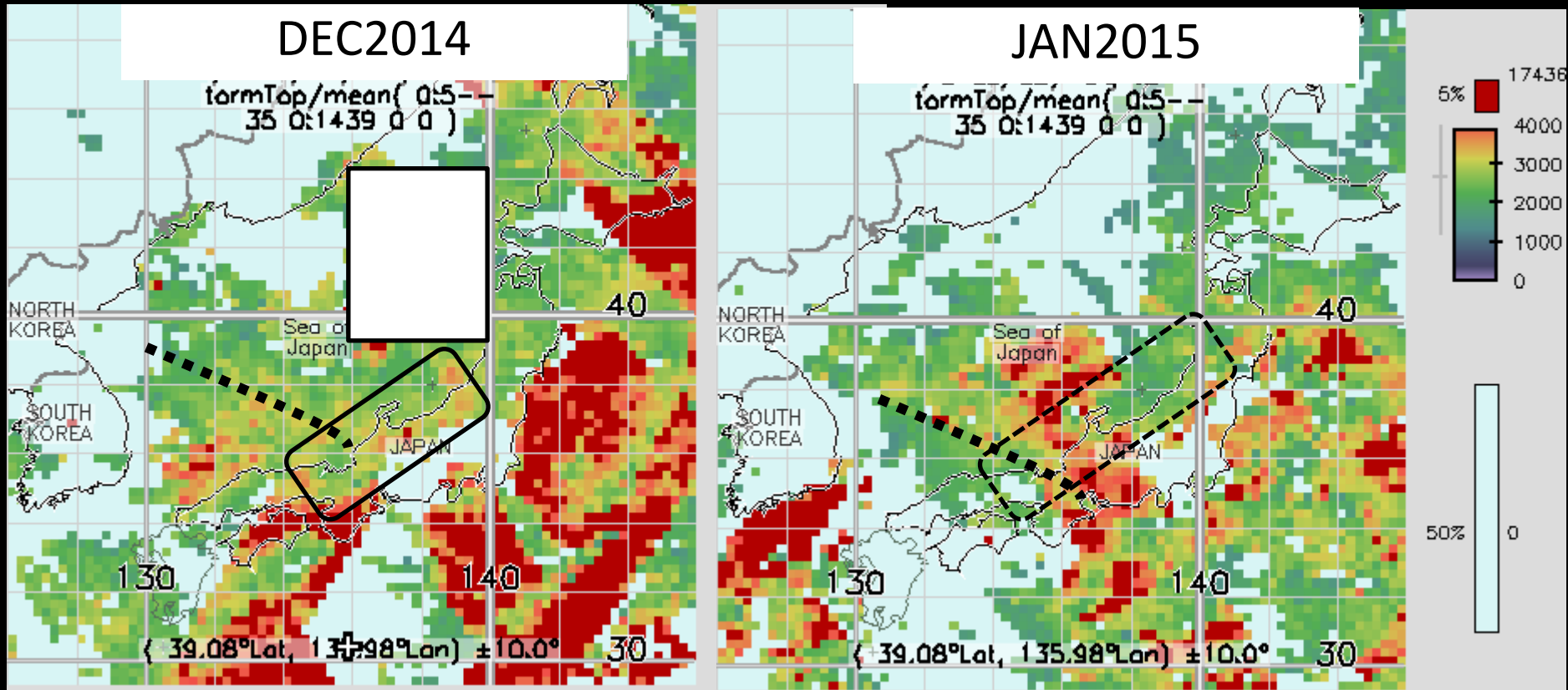
16DEC2014



Making use of GPM datasets, the development of snow-clouds in the JPCZ is investigated. The most intensive precipitation is found at the northern edge of the JPCZ.



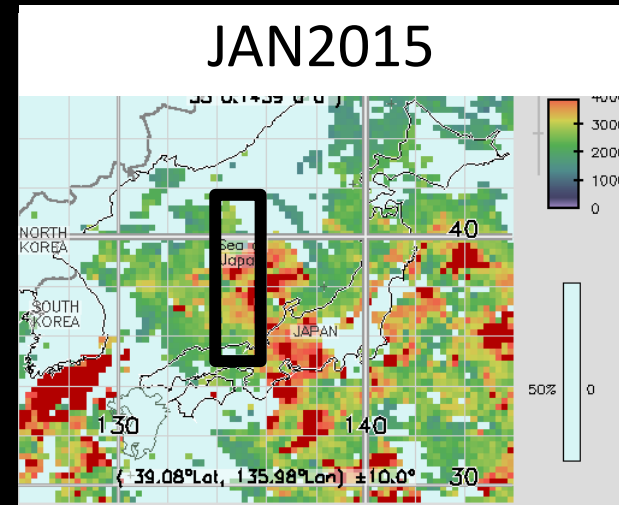
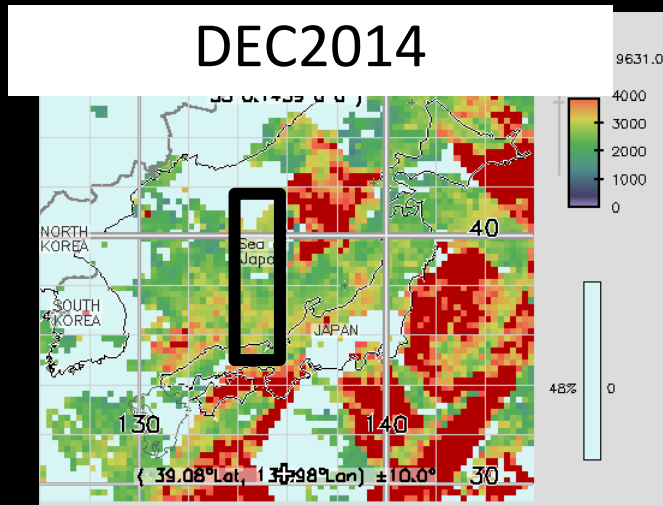
Storm Height (Ku)



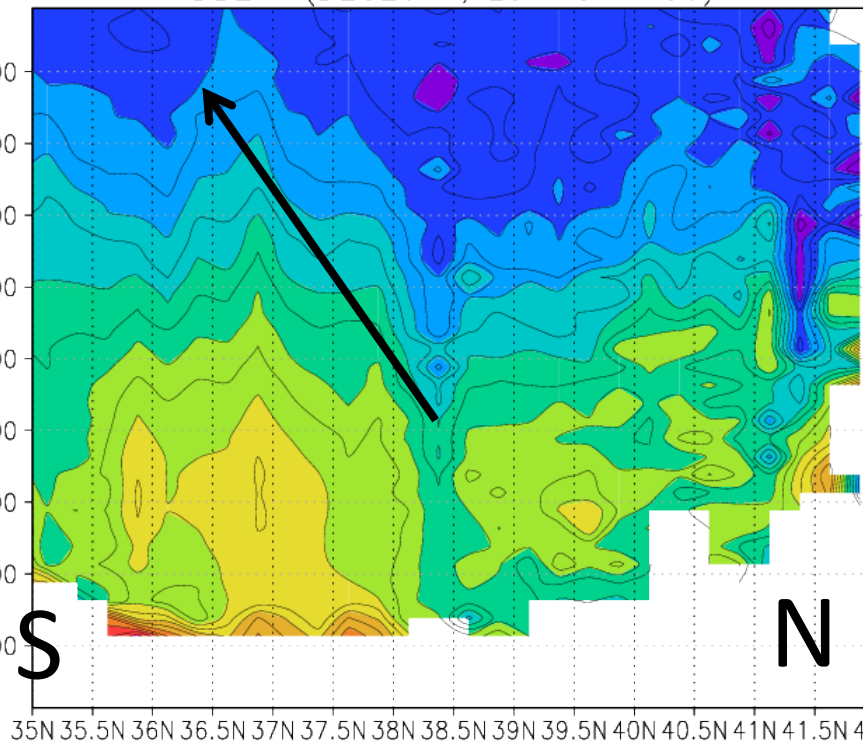
Convection Development from Ocean to Land ?

->Mean DBZ and CFAD

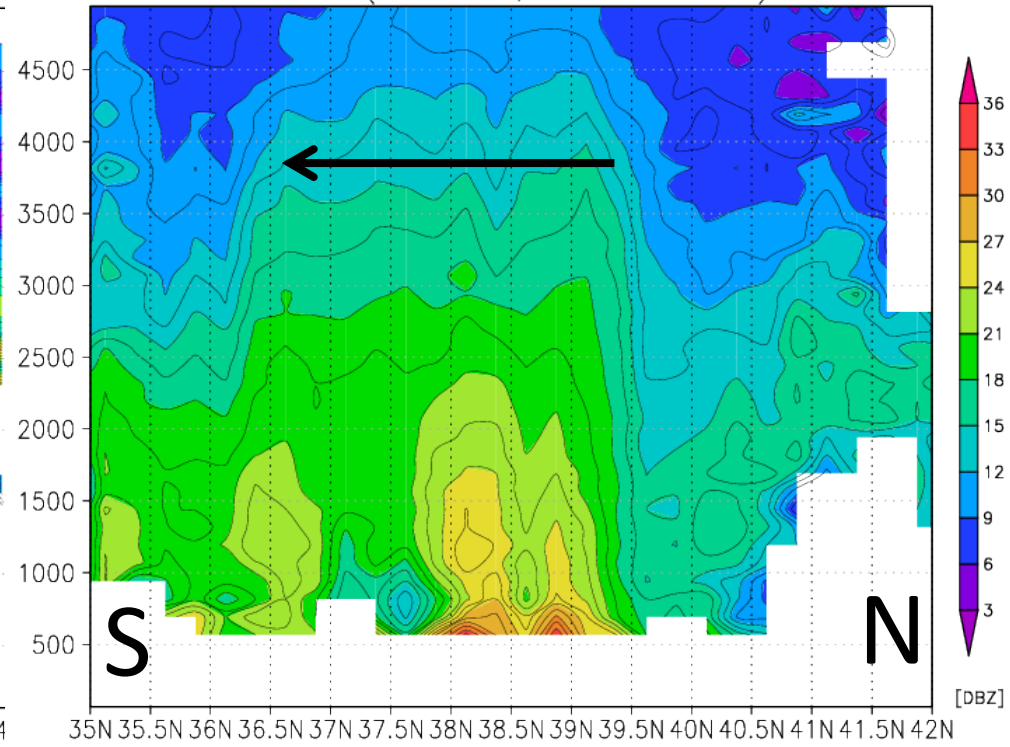
DBZ mean (Ku)



DBZm (DEC2014, Lon:134–136)

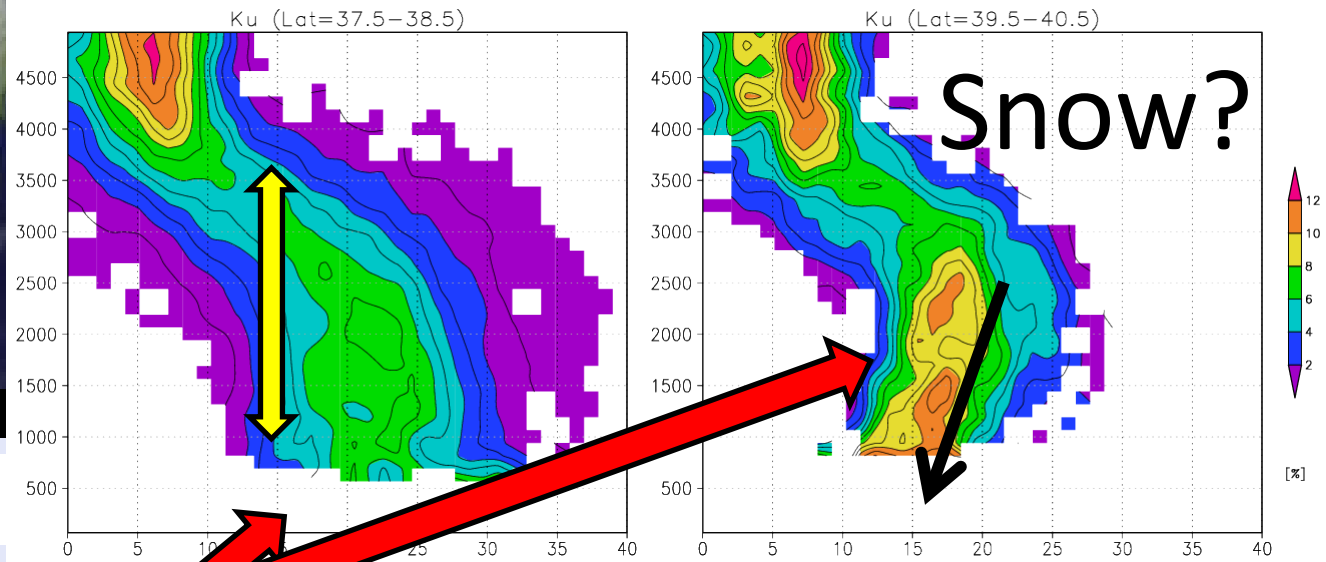
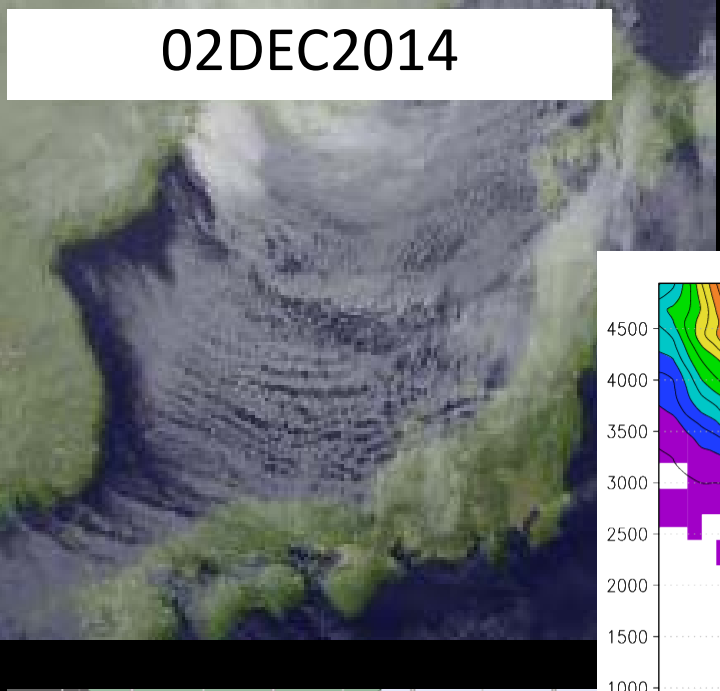


DBZm (JAN2015, Lon:134–136)

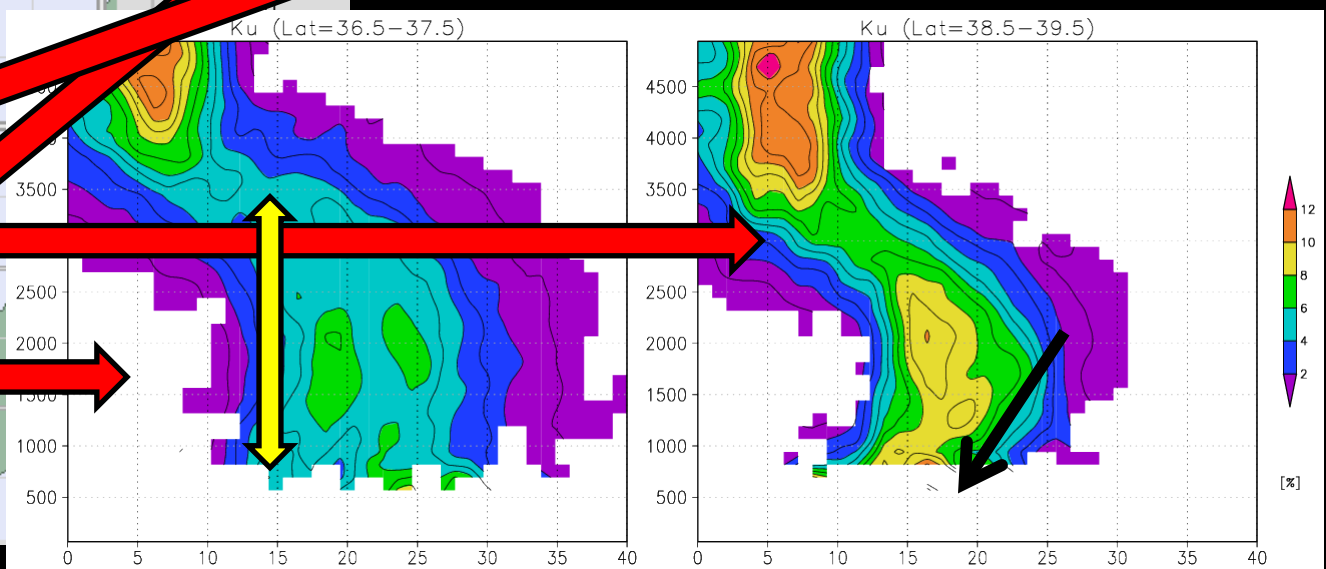
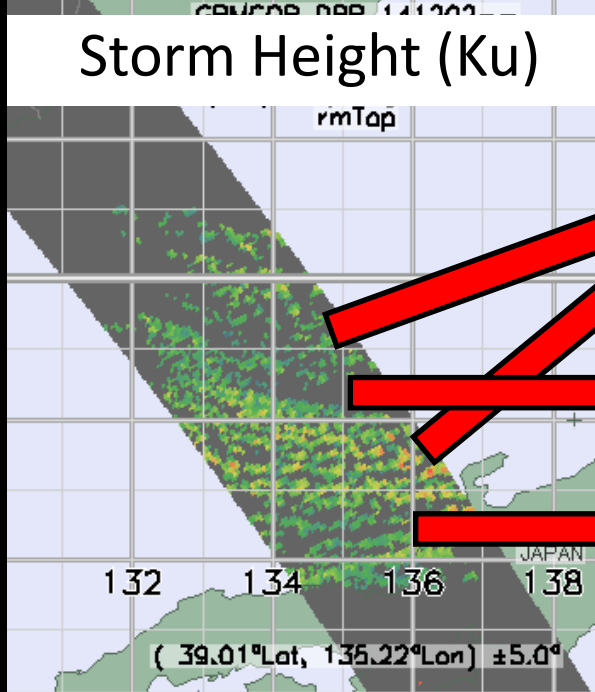


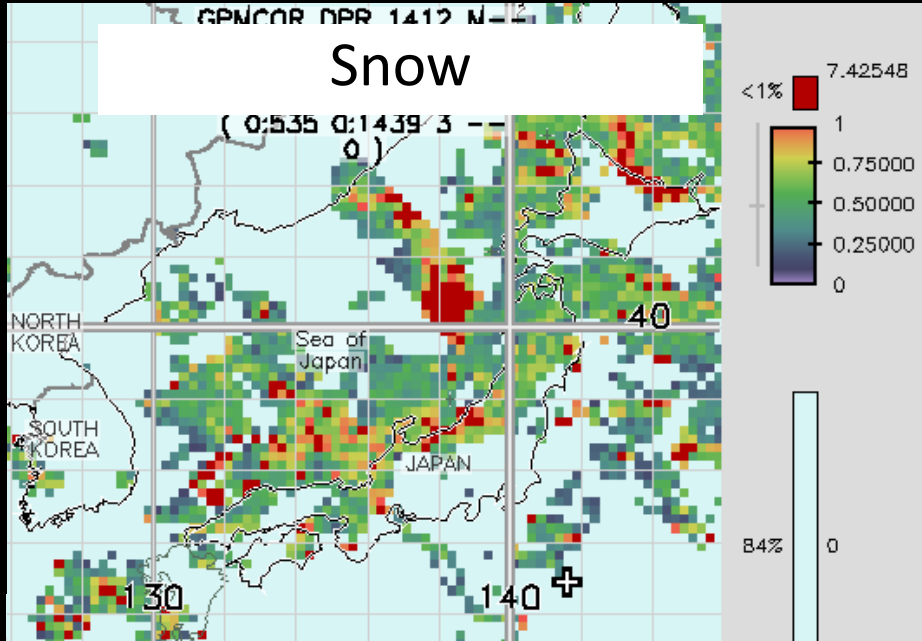
02DEC2014

CFAD (Ku)

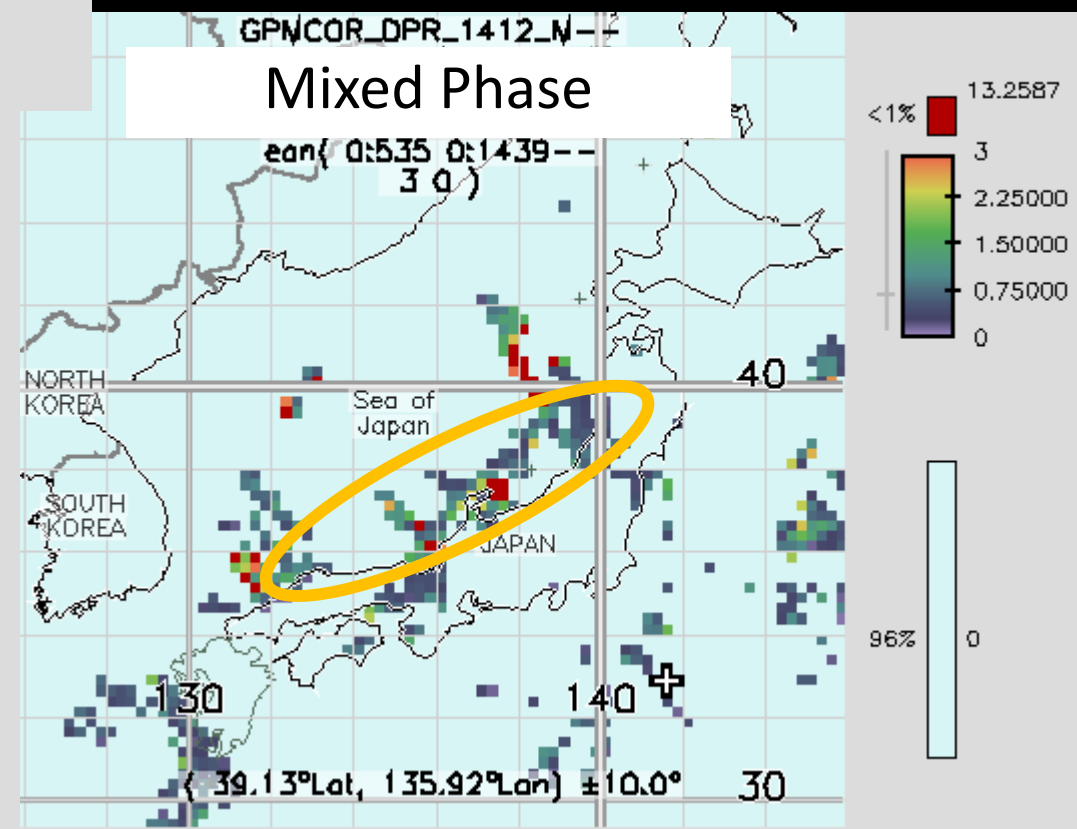
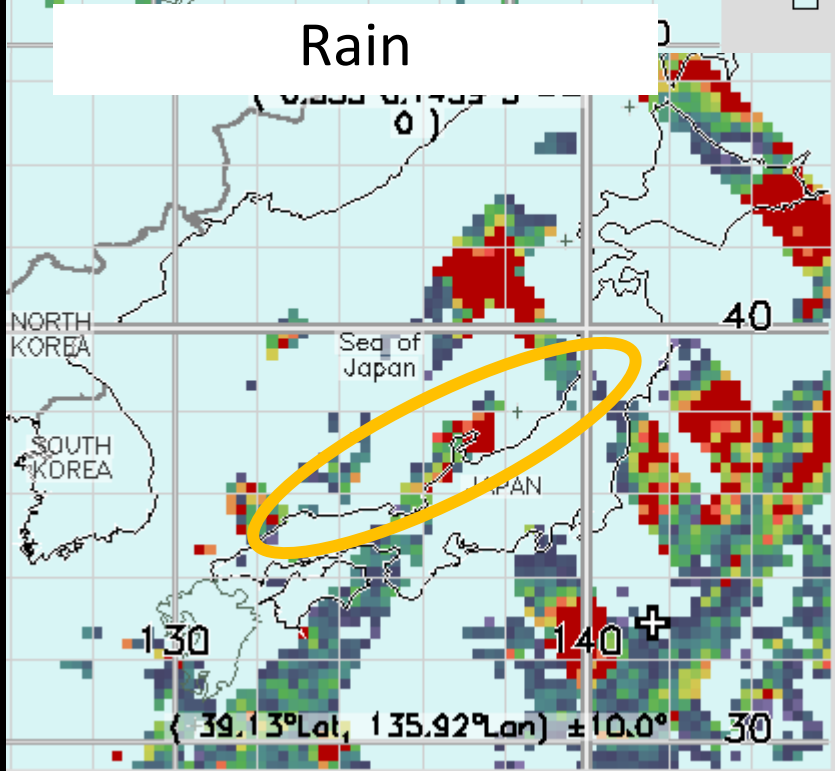


Storm Height (Ku)

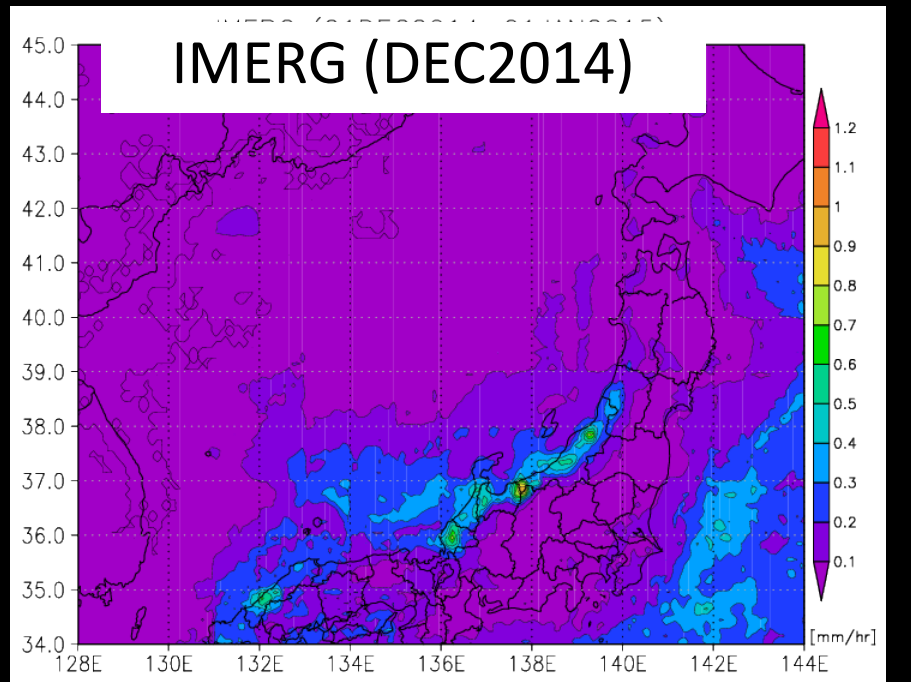
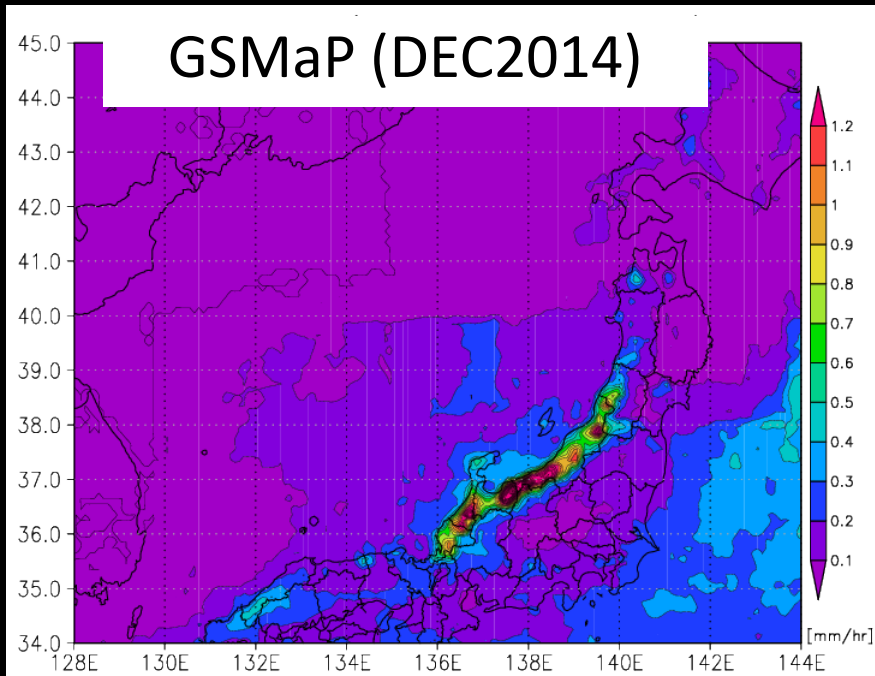
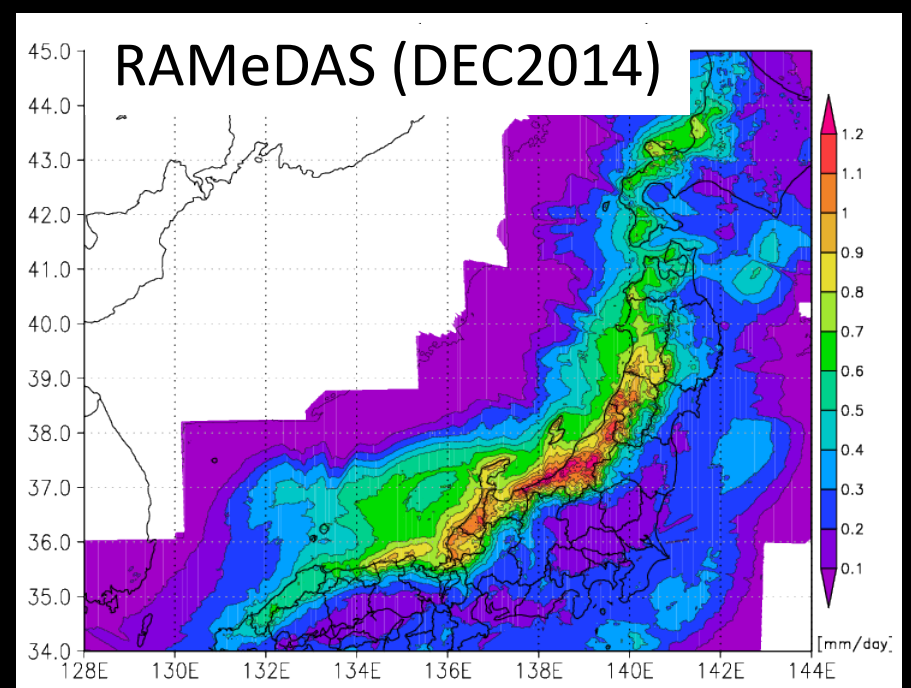




Conditional Mean of Precipitation (DEC2014)



M.W. Retrieval (DEC2014)



Summary

- To statistically examine the change of the vertical scale of convection from ocean to land.
 - > Unclear increase in monthly mean storm height
 - > Stronger reflectivity near the land than open ocean
 - > Phase change near the coast region ? (from snow to rain)
- To check the robustness of the different cloud characteristics in the JPCZ.
 - > Similar features are confirmed in the GPM data

Limitations:

Small sample number (1-winter observation)
horizontal resolution