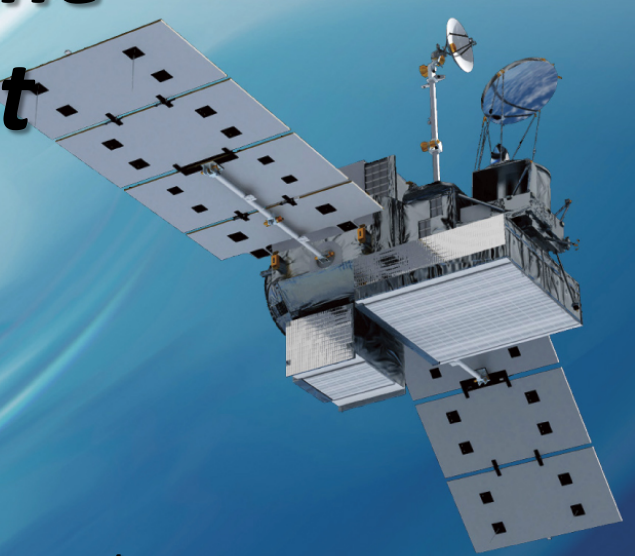


Japan's science status for the Precipitation Measurement

KENJI NAKAMURA^{1,2}

¹ Earth Observation Research Center, Japan Aerospace Exploration Agency

² Hydrospheric Atmospheric Research Center, Nagoya University





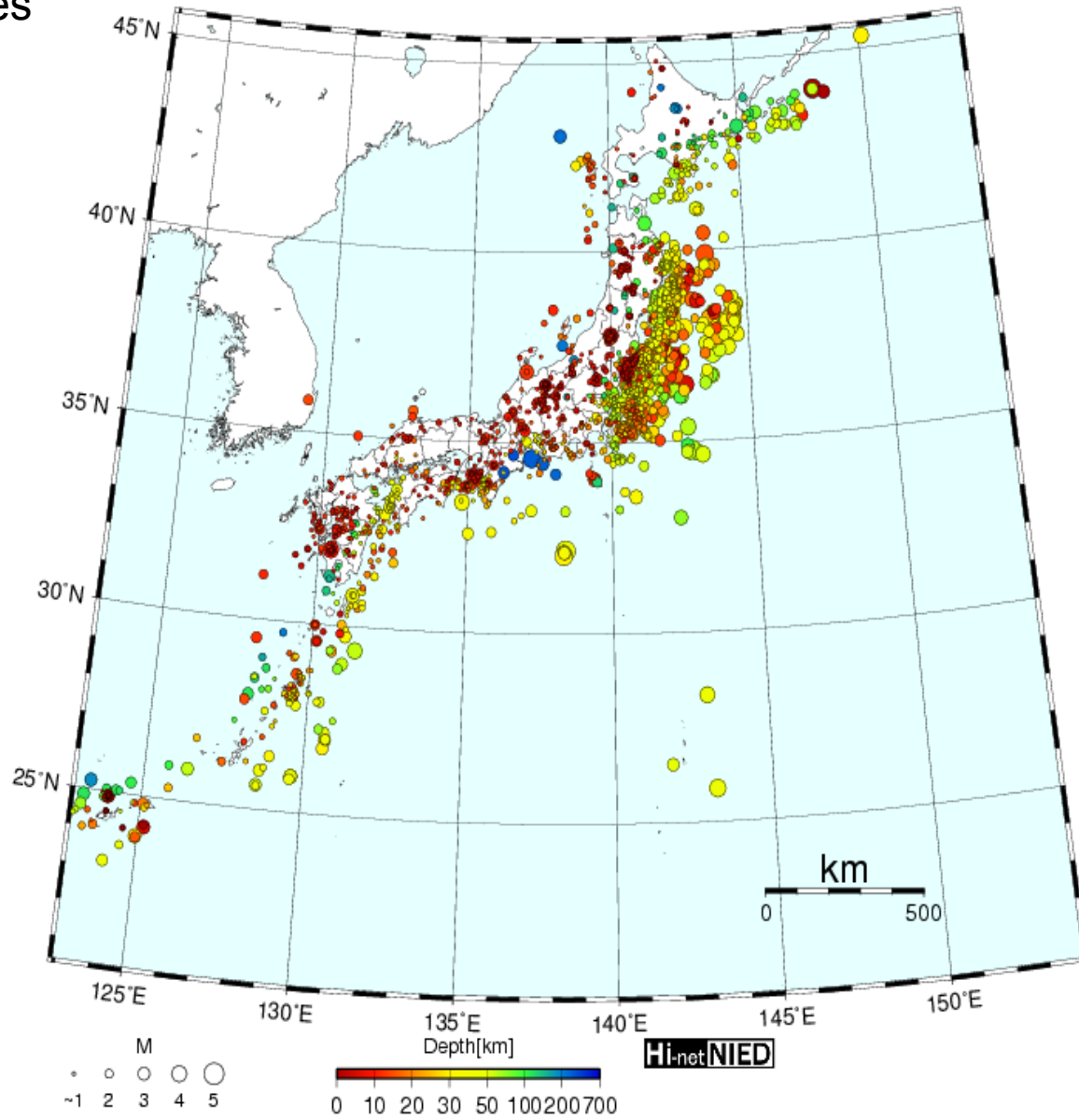
Video player controls: a pause button, a speaker icon, the text "0:21 / 0:45", the resolution "360p", a share icon, and a full screen icon.

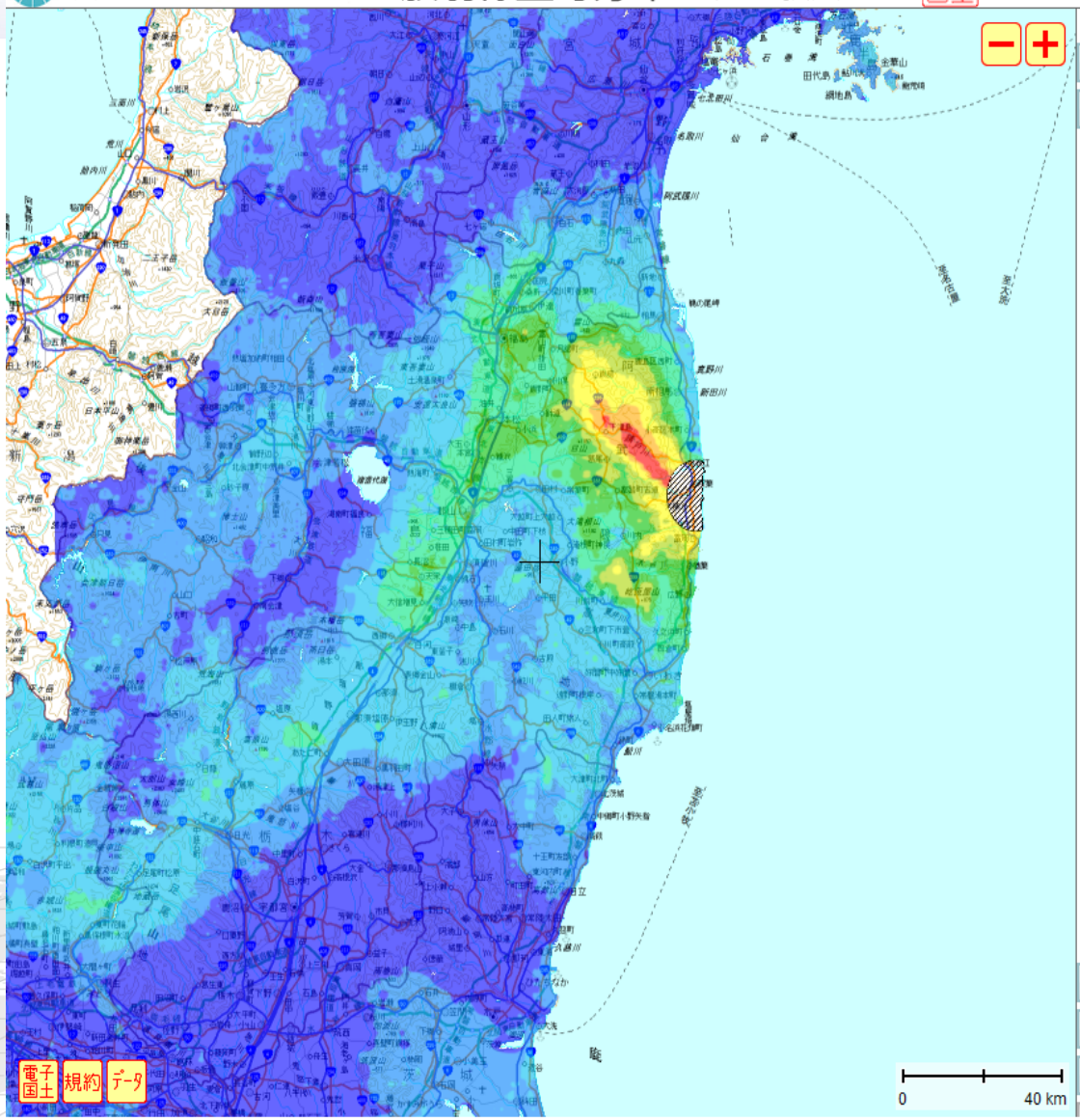


Earthquakes

■ 広域・日本全国 広域・最新7日間 の震央分布図

2011/10/24 16:15:00 ~ 2011/10/31 16:15:00 (N=4090)





地表面から1mの高さの
空間線量率($\mu\text{Sv} / \text{hr}$)

| | | |
|--|------------|----------------|
| | 19.0 < 測定値 | |
| | 9.5 < 測定値 | ≤ 19.0 |
| | 3.8 < 測定値 | ≤ 9.5 |
| | 1.9 < 測定値 | ≤ 3.8 |
| | 1.0 < 測定値 | ≤ 1.9 |
| | 0.5 < 測定値 | ≤ 1.0 |
| | 0.2 < 測定値 | ≤ 0.5 |
| | 0.1 < 測定値 | ≤ 0.2 |
| | | 測定値 ≤ 0.1 |

測定結果が
得られていない範囲

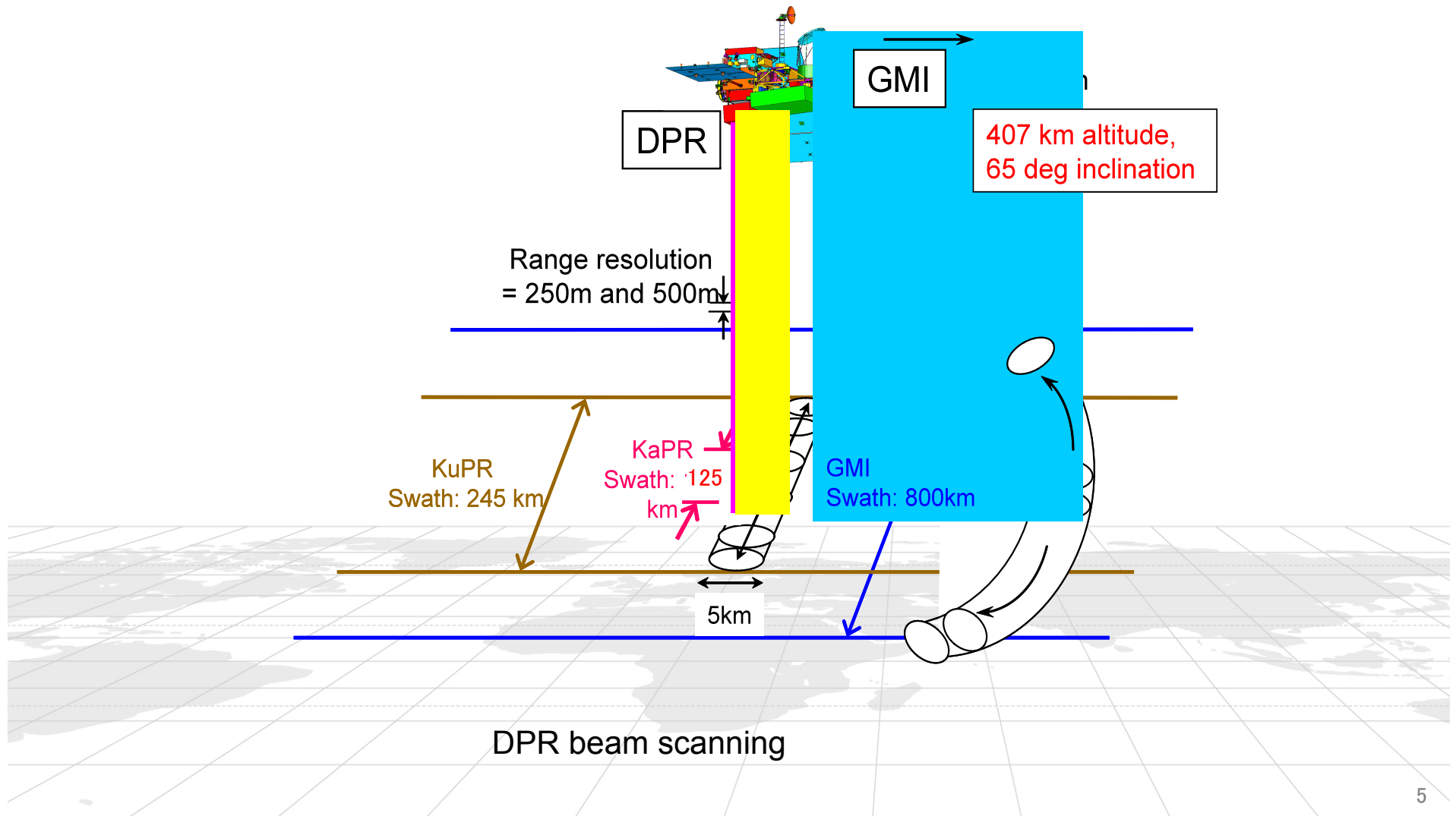
※年間の日常生活に換算した場合
例えば、1.0 $\mu\text{Sv}/\text{hr}$ は、年間約5mSv
など。詳細は[こちら](#)

電子国 規約 データ

Tsukuba
a

Outline of the DPR

Dual-frequency precipitation radar (DPR) consists of
Ku-band (13.6GHz) radar : **KuPR** and
Ka-band (35.5GHz) radar : **KaPR**



- * *Joint algorithm developments*

 - Joint Japan-US team*

 - DPR algorithm*

 - DPR-GMI combined algorithm*

 - ...*



GV activities for GPM/DPR of this fiscal year

* For algorithm GV

* Intensive observation year with the dual Ka-band radar system

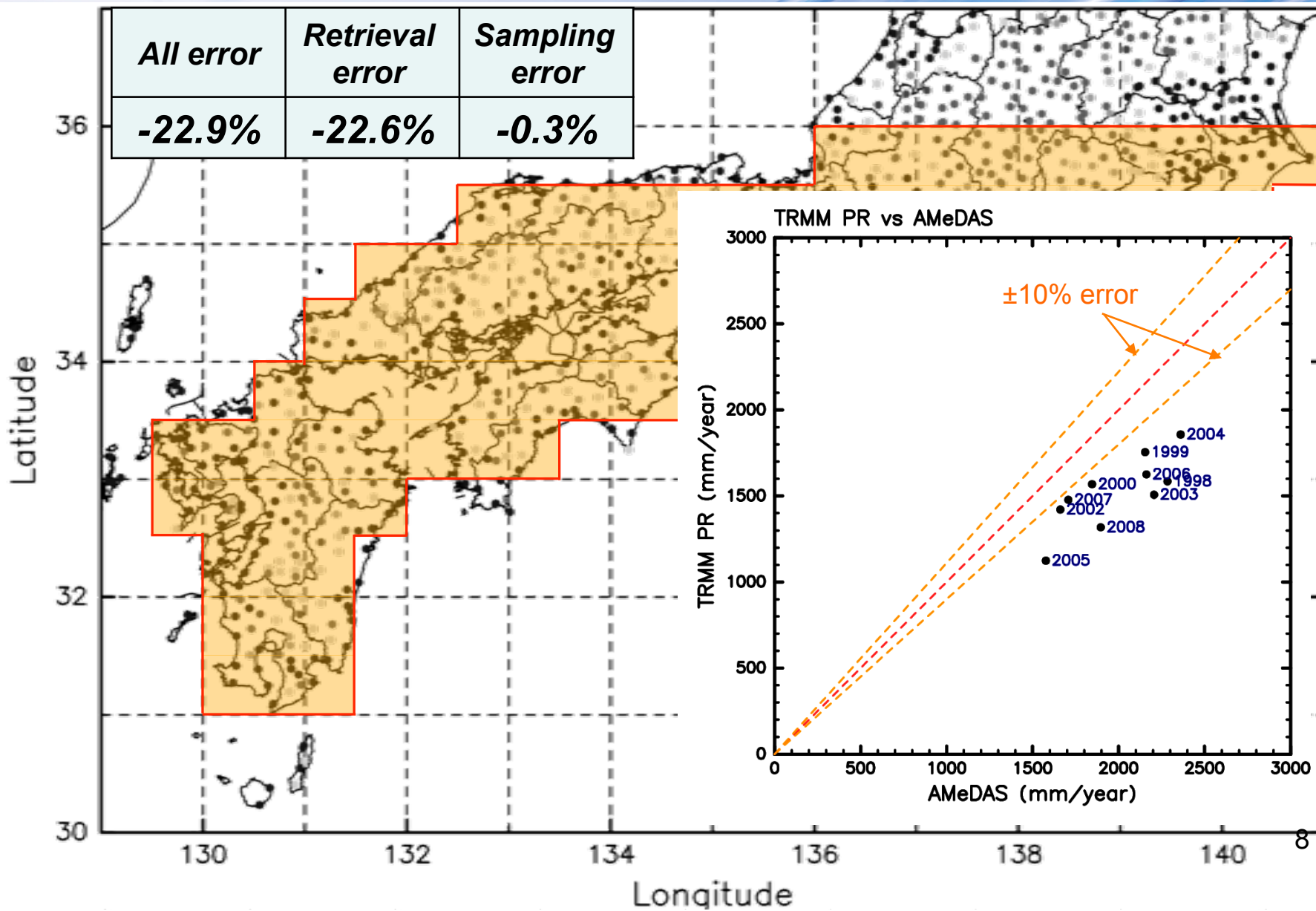
- * GV observation in Okinawa was conducted from September 2010 to July 2011.
- * GV observation in Tsukuba has just be started from this August.
- * Campaign observation in Mt. Fuji, the highlight of these observation, will be conducted in October and November, and Nagaoka snow observation will be conducted in next winter.

* For Product GV

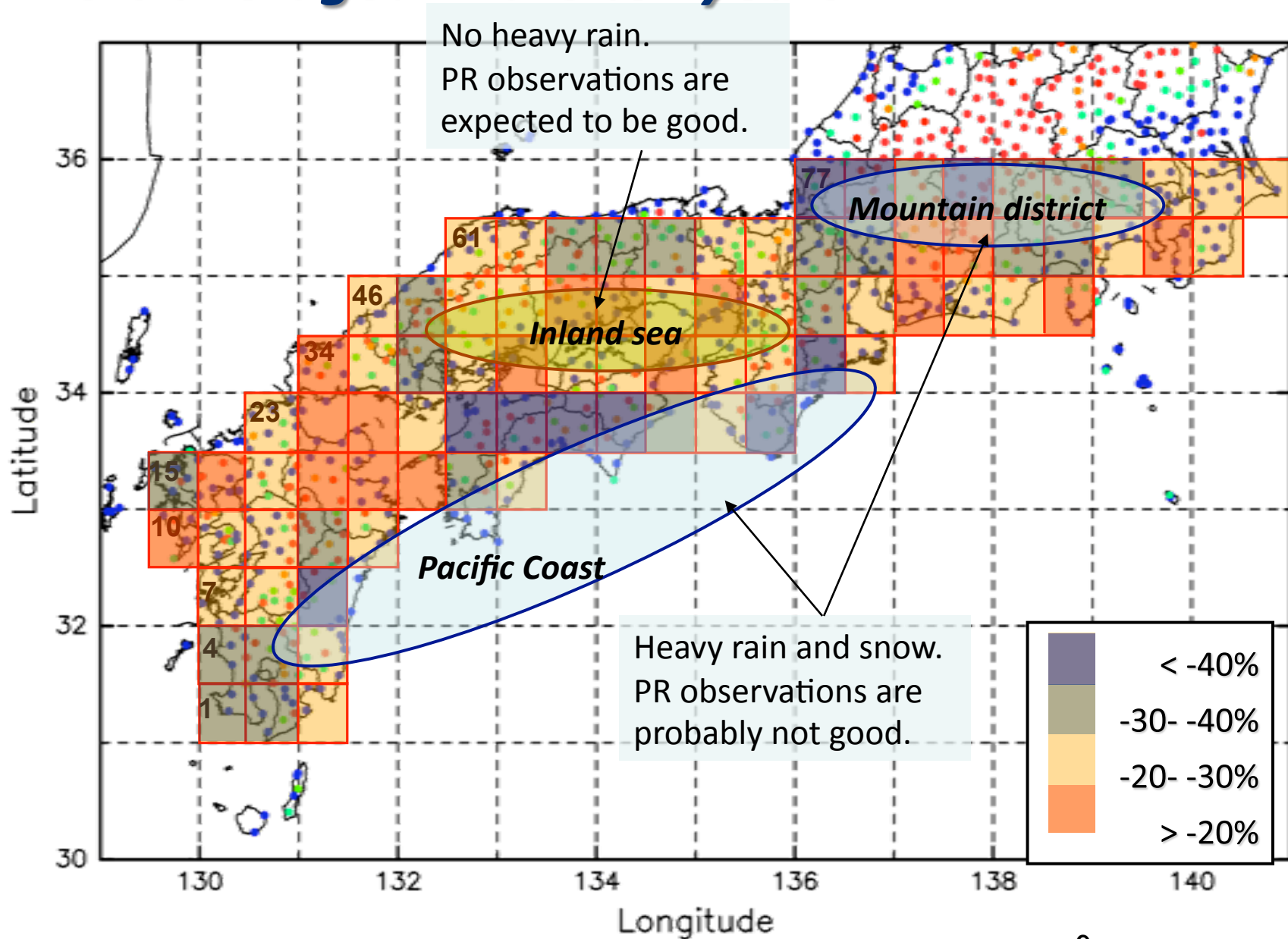
* Asian Collaboration for GPM GV will be continued.

- * Next Asia workshop in Tokyo in December.
- * 3rd Satellite Precipitation Session on AOGS@Taipei, August 2011
- * Japan-Korea collaboration

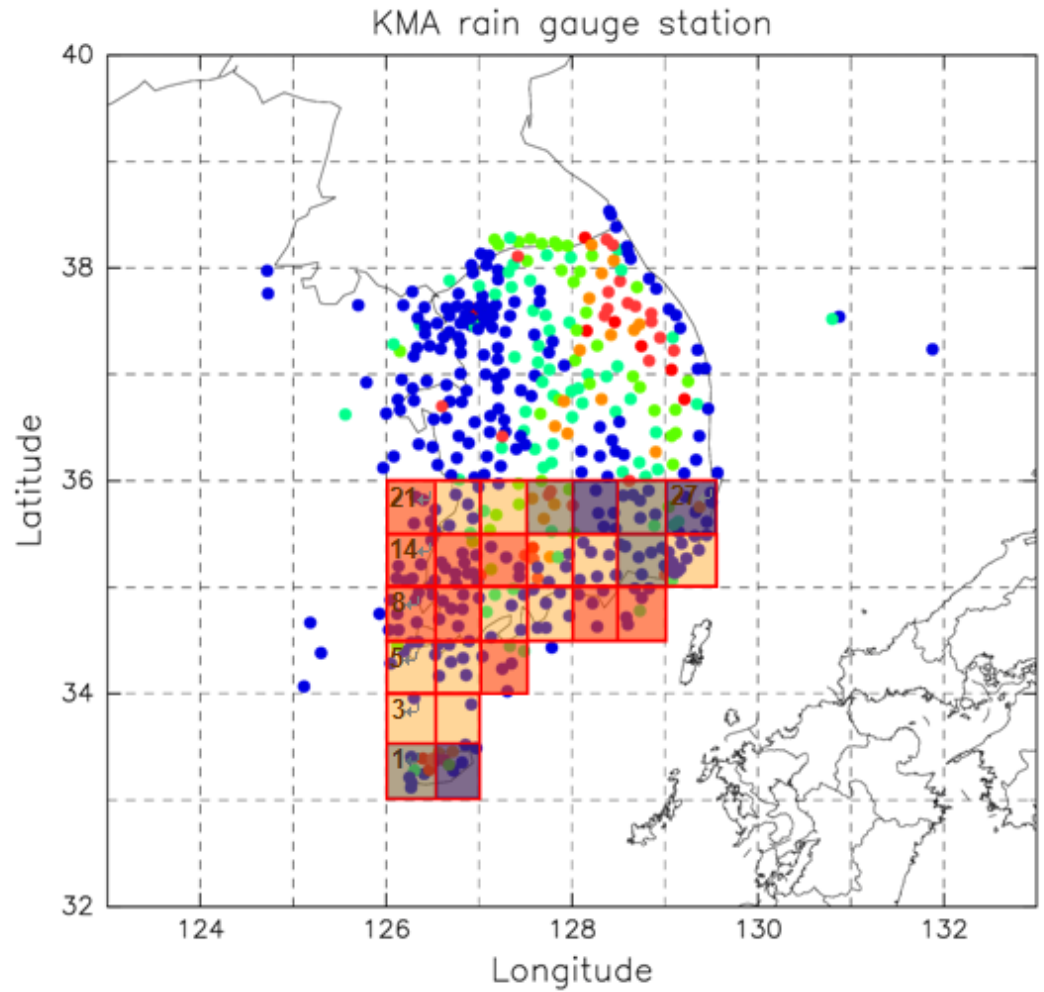
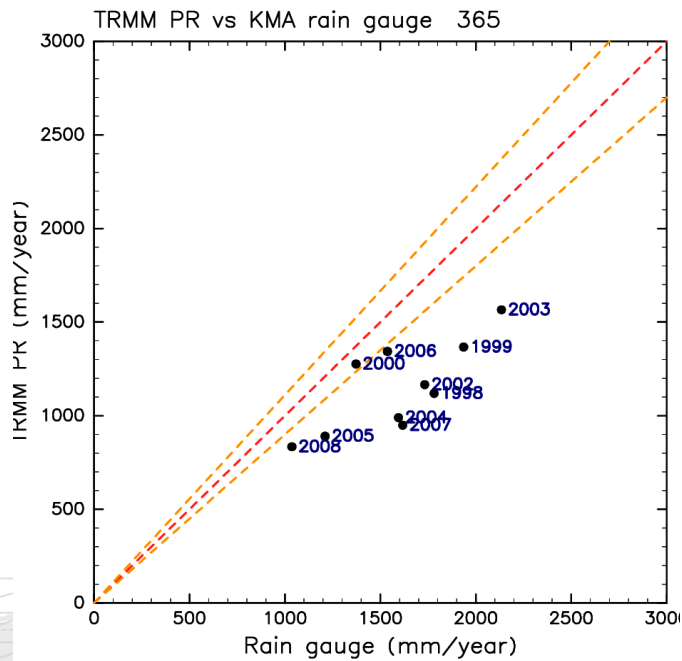
4.2. Wide area



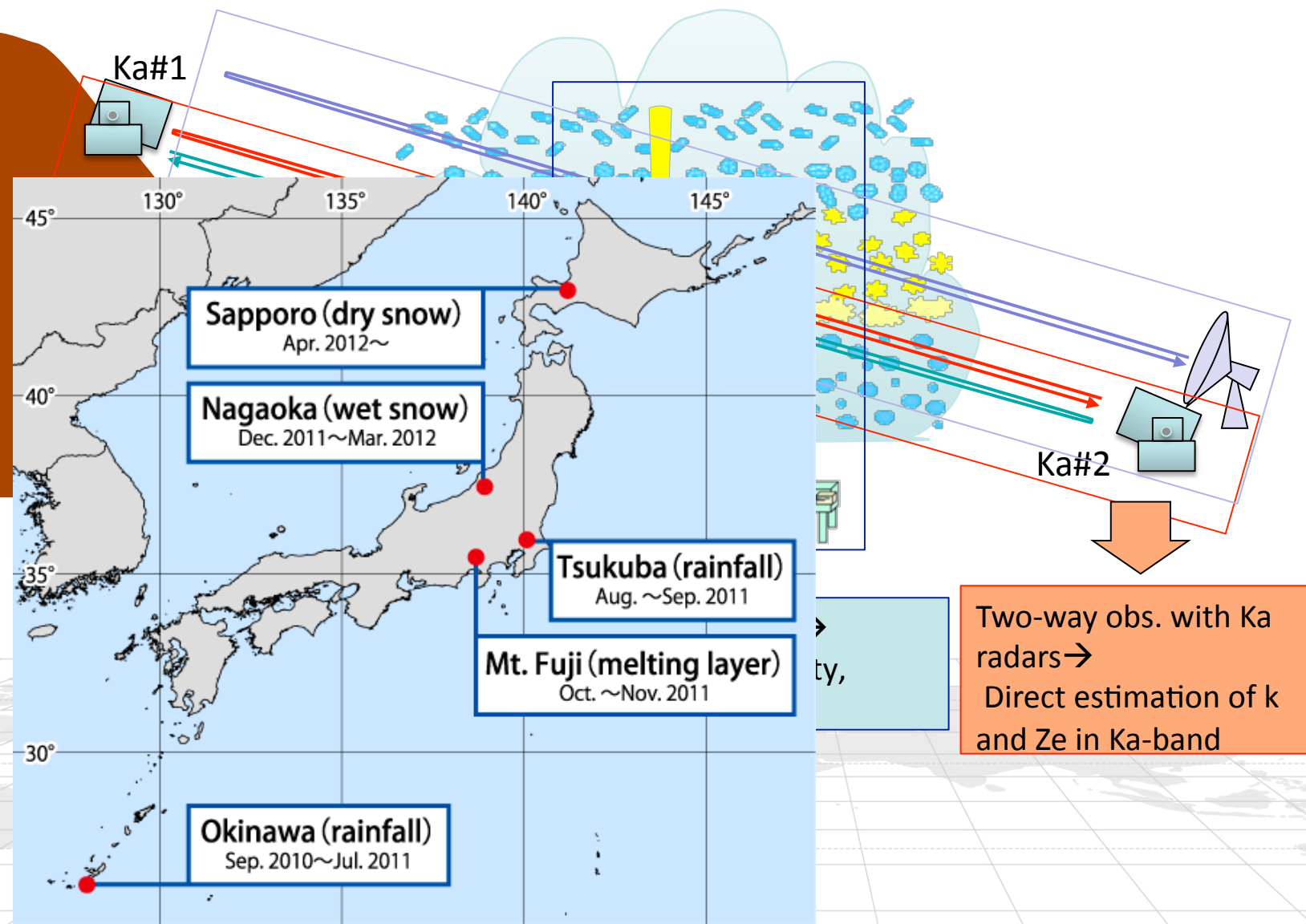
Errors averaged in the ten years



Result with Korean raingauge data (part of KMA-JAXA collaboration)



Concept of the GV experiments for validation before launch



Two-way obs. with Ka radars →
Direct estimation of k and Z_e in Ka-band

Expected results which could be incorporated in the DPR algorithm:

k – Ze relationship(s)

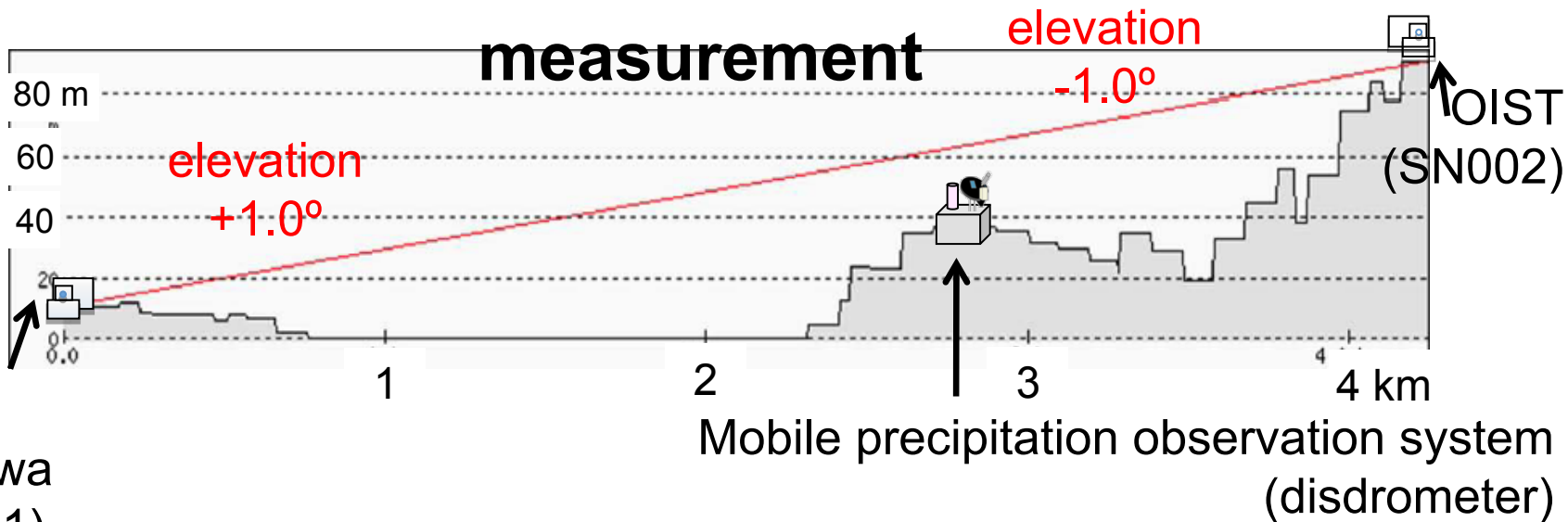
Total attenuation through melting layer

Algorithm evaluation dataset:

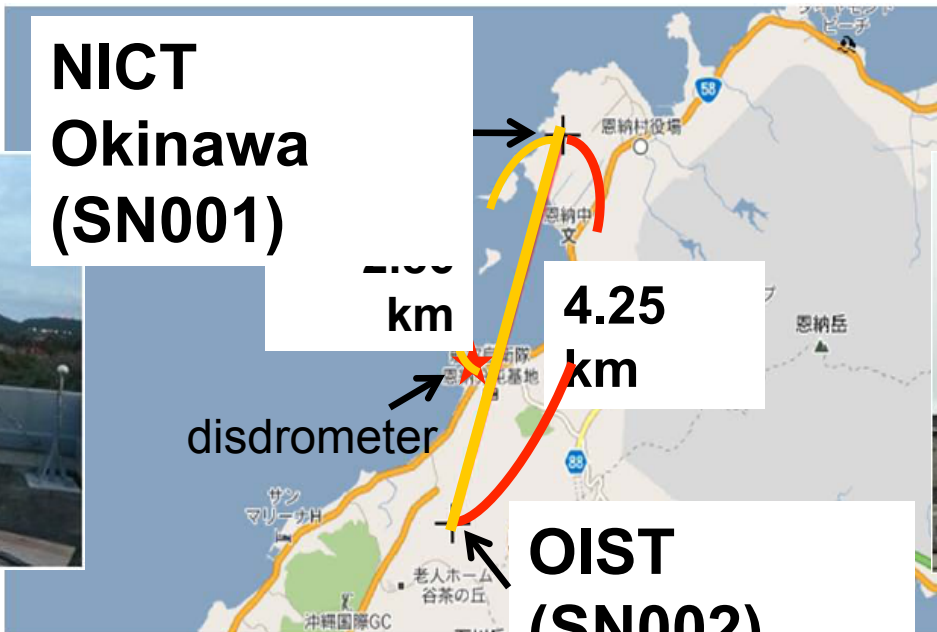
(Ka - C) dataset: maybe obtained by Ka-COBRA data but limited.

(Ka – X) dataset: hopefully obtained in Mt. Fuji experiment.

Details of the dual Ka radar measurement

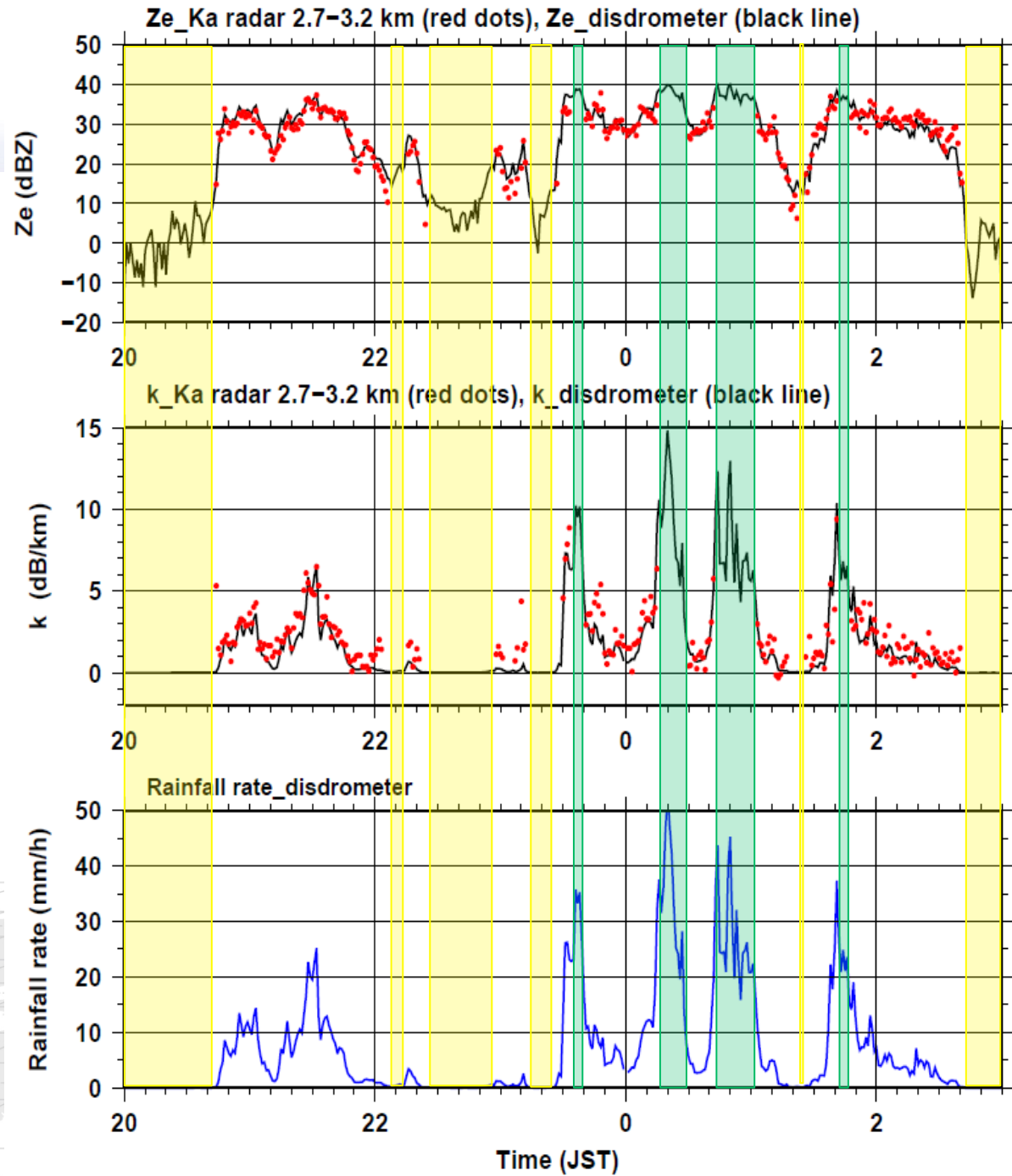


SN001



SN002

Time-series of Z_e , k and rainfall rate (20 JST, 24 May - 3 JST, 25 May, 2011)



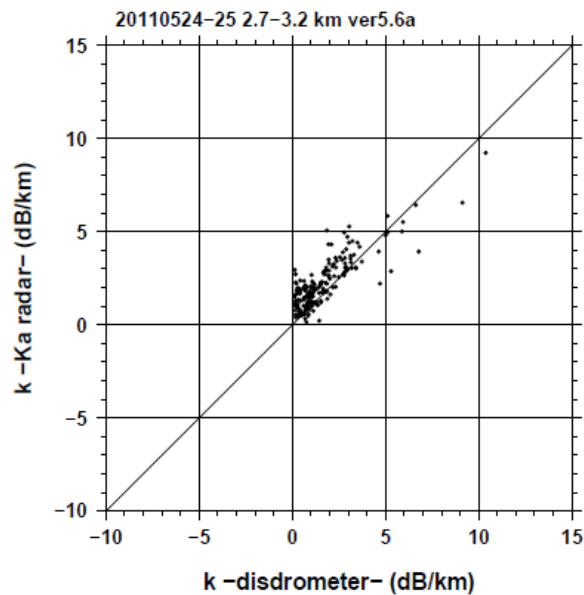
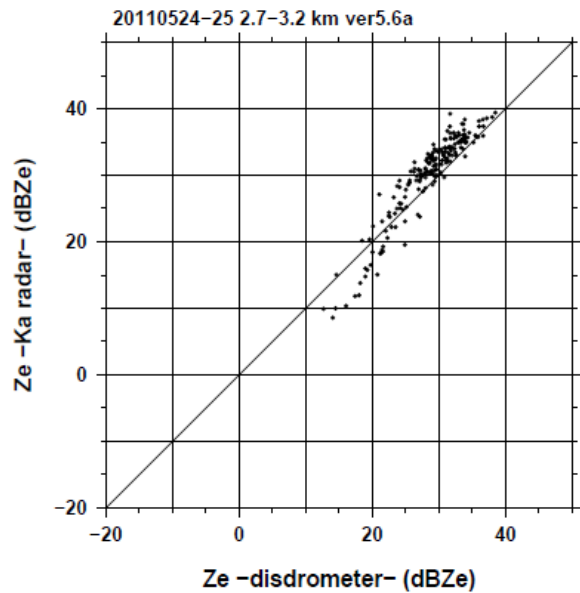
- : no rain
(Total attenuation was positive.)
- : strong rain attenuation



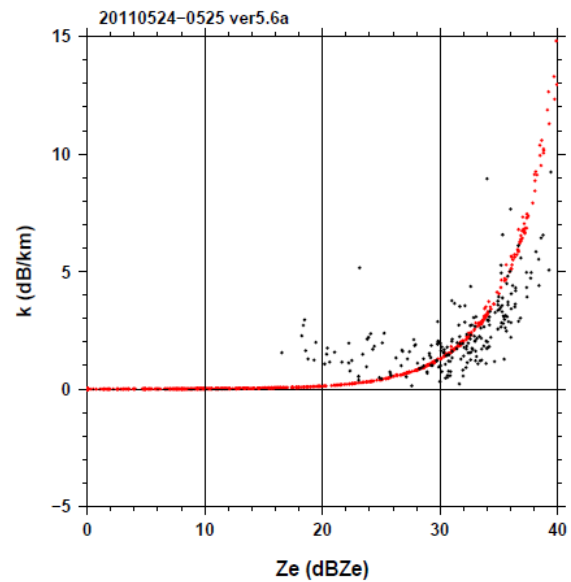
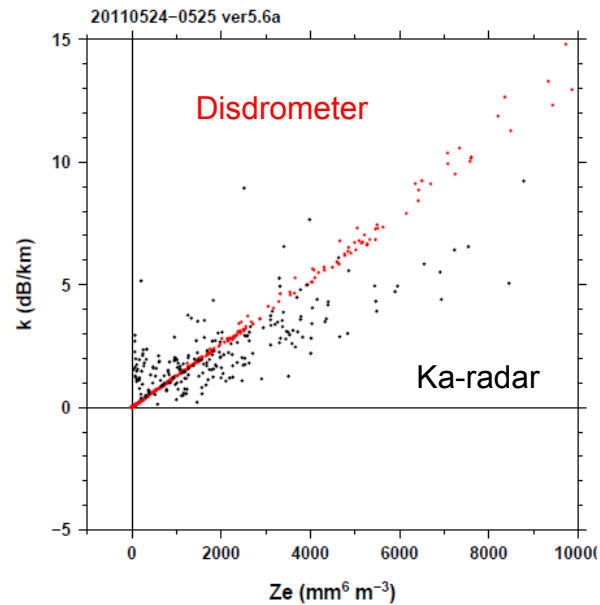
5-point (50 m)
moving average

500 m
attenuation
path

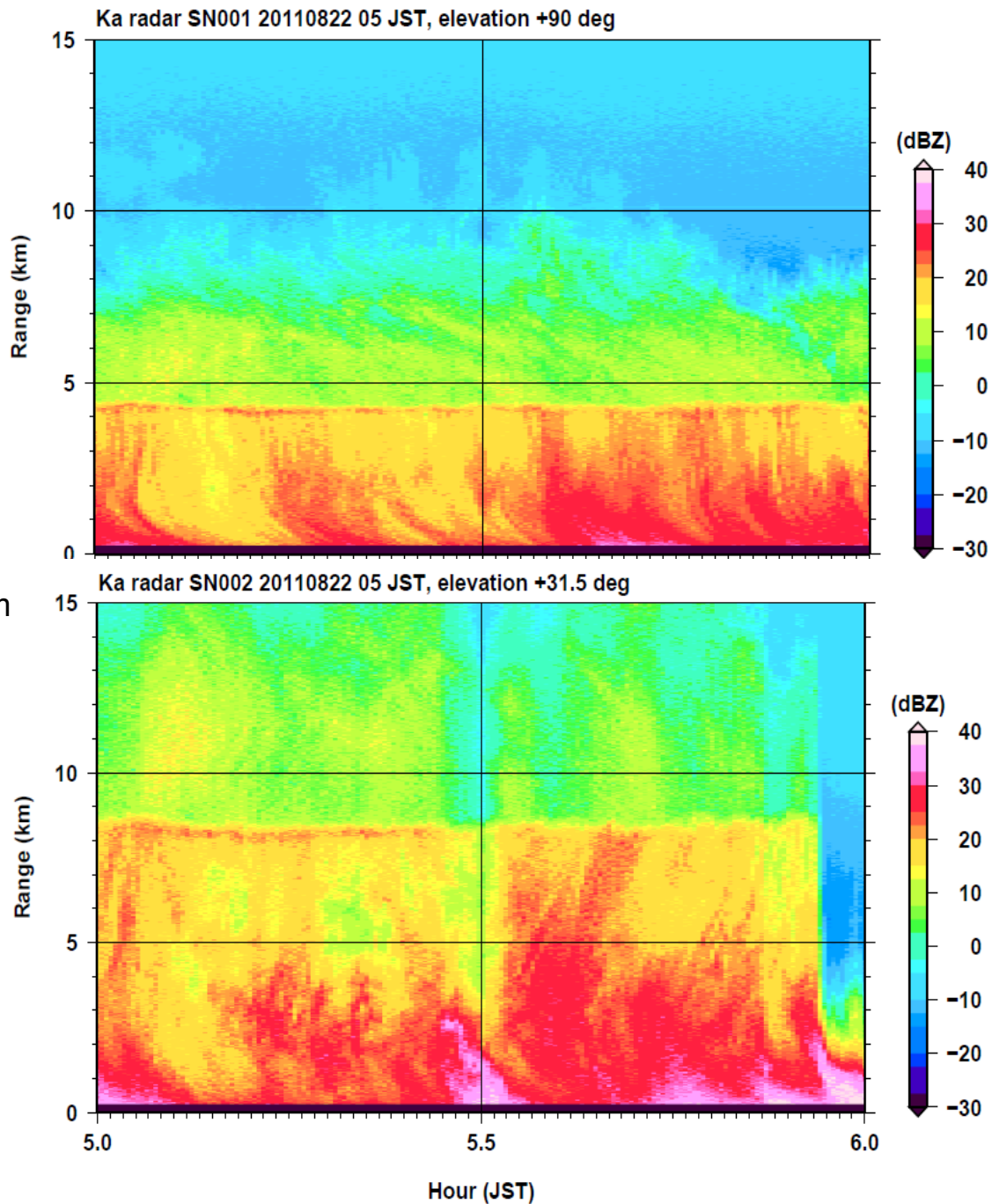
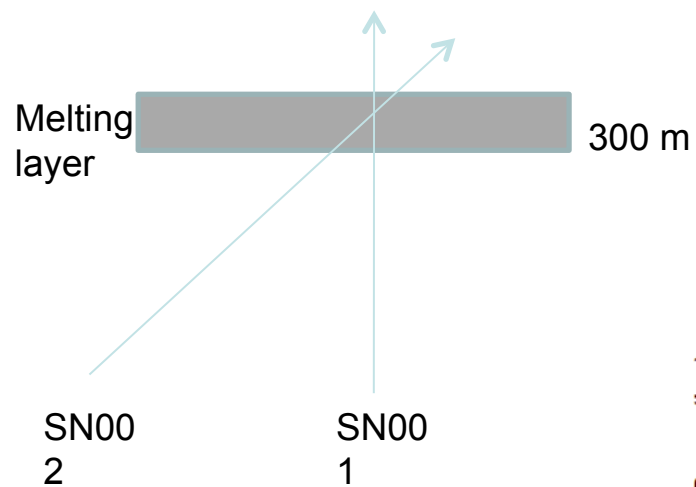
Disdrometer



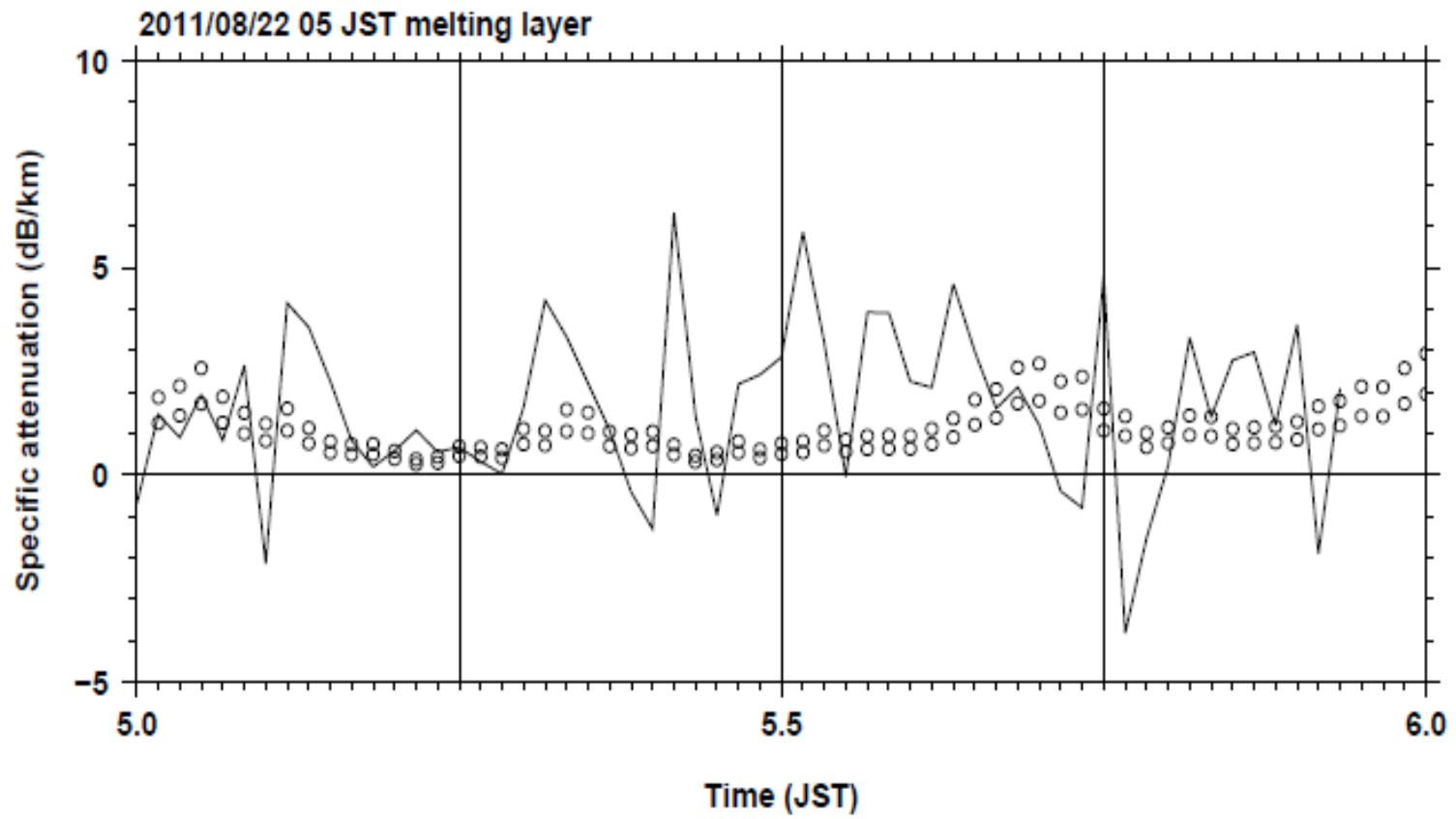
K -Ze relationship



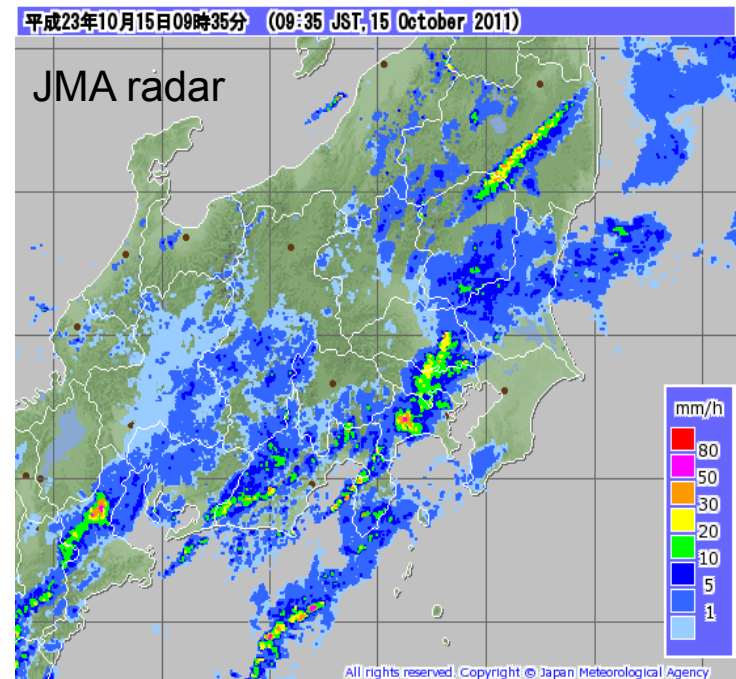
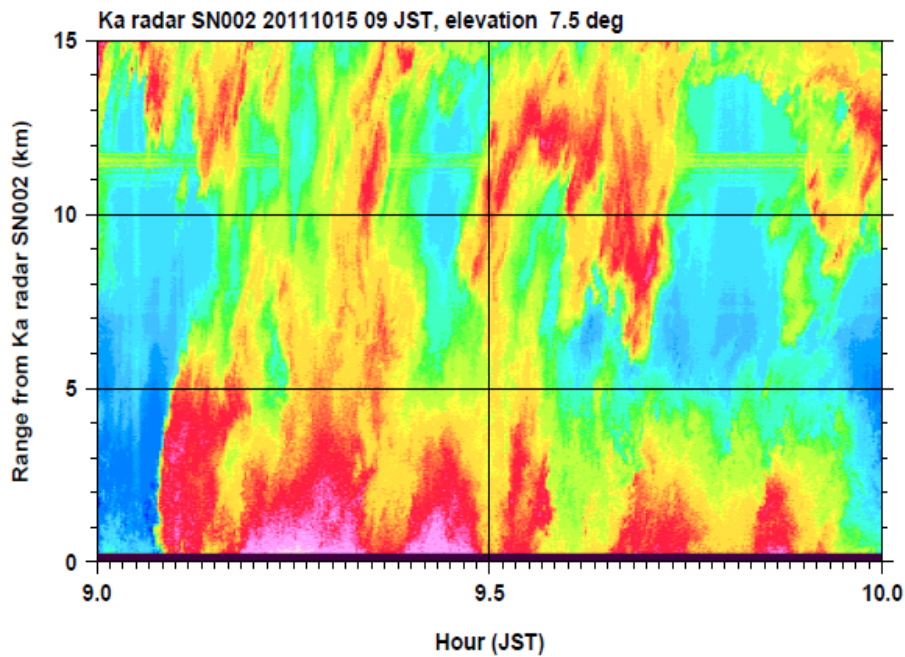
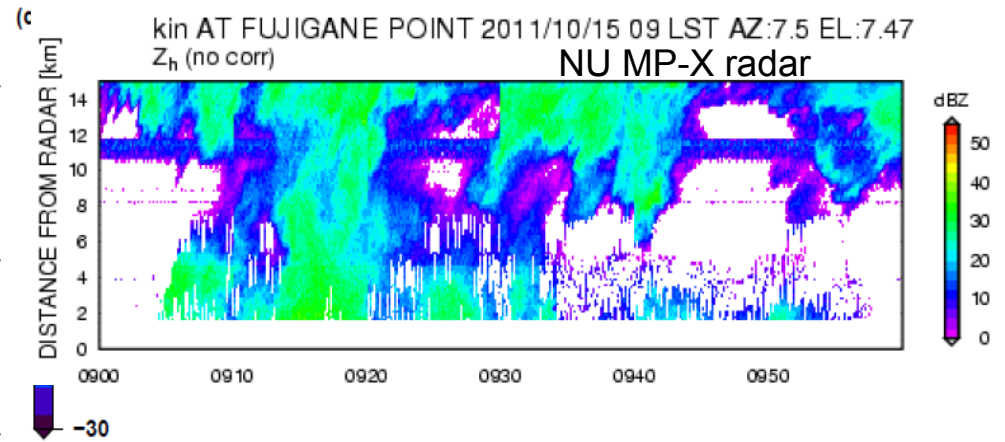
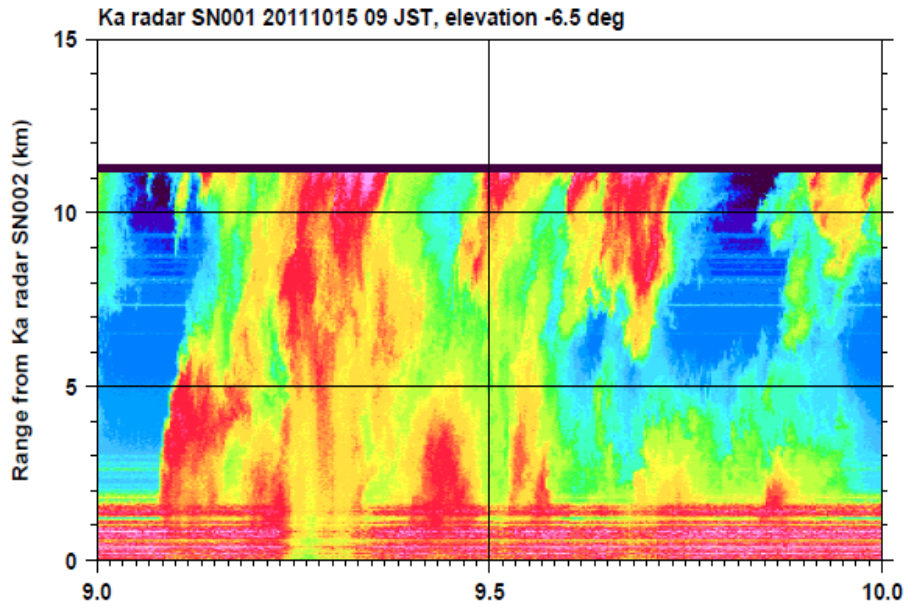
JAXA Tsukuba – NIED experiment



Attenuation in melting layer



15 Oct. 9-19:00 JST



Thank you

