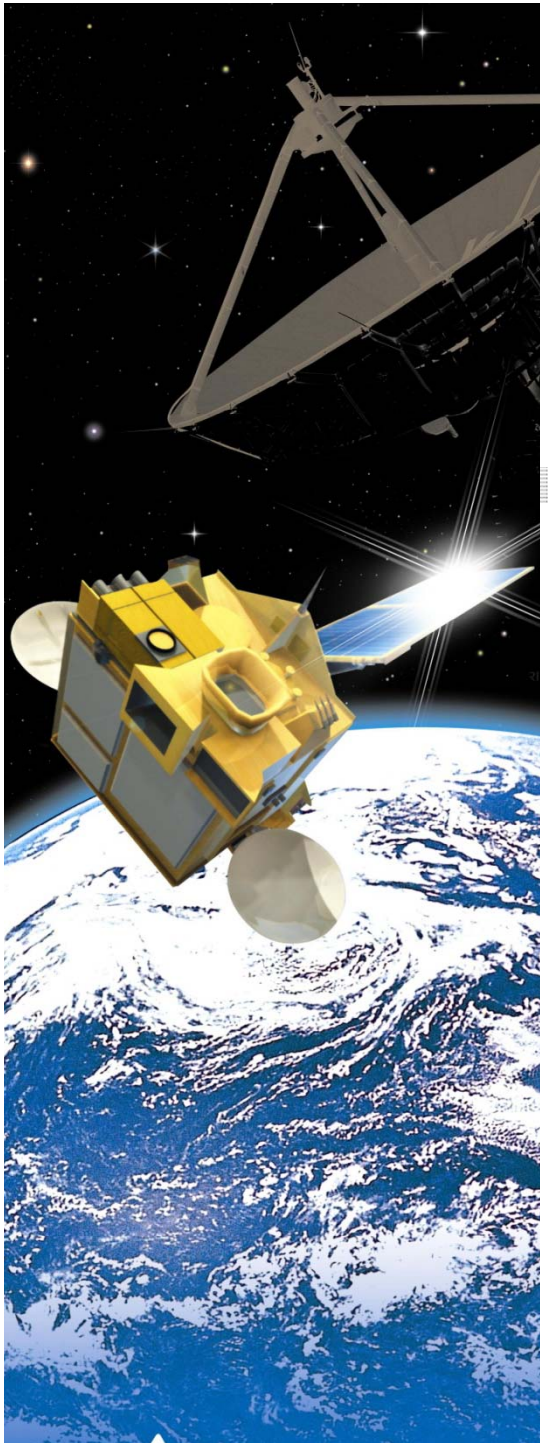


KMA's Activities of GSICS

2nd Teleconference Meeting

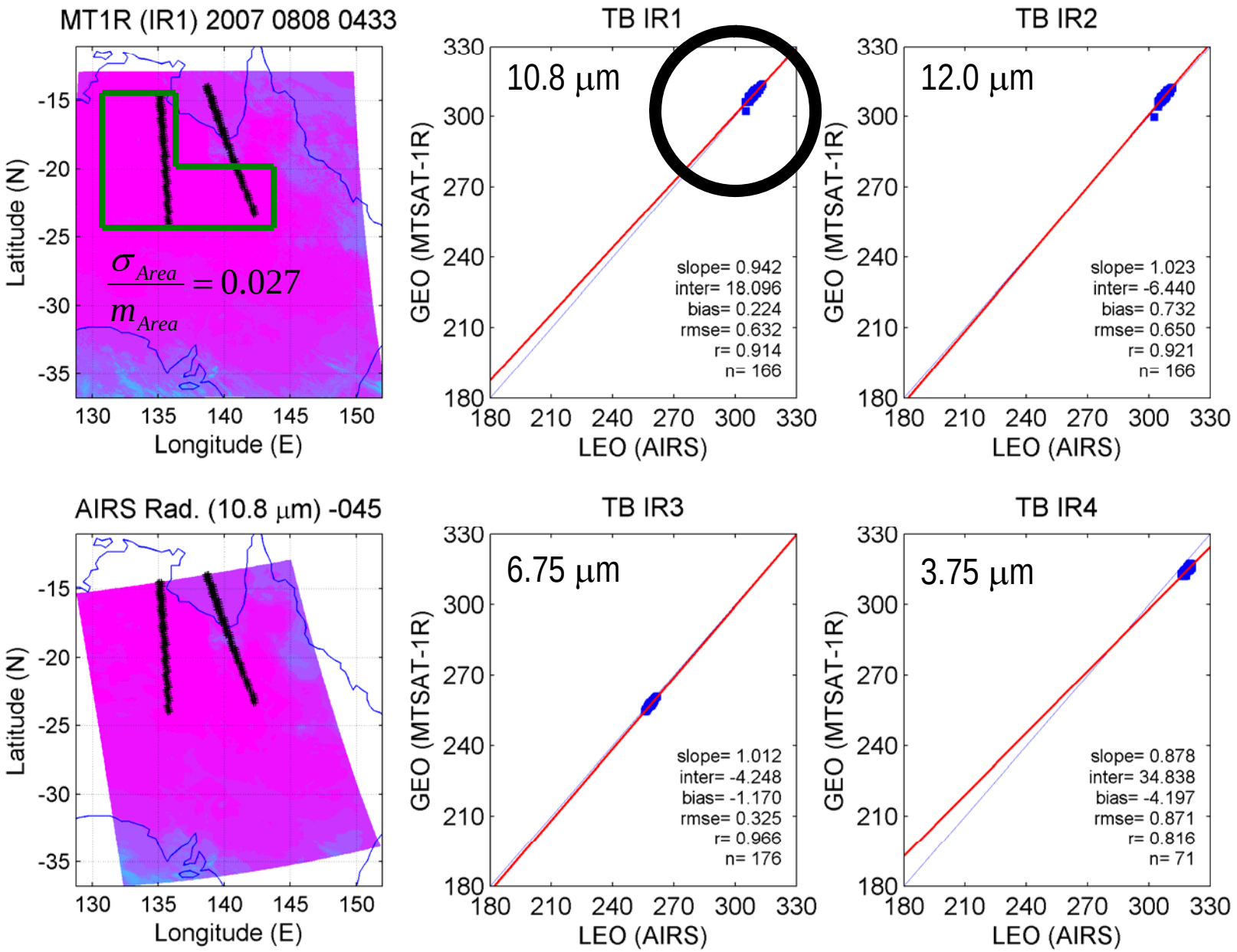
2008. 12. 16

GEO-LEO IR Calibration

- **Establish the inter-calibration system for MTSAT-1R with AIRS and IASI**
  - Implement GSICS S/W using MTSAT-1R data
  - Period : Jun.2007 ~ May. 2008
  - Test conditions
    - AIRS vs. IASI
    - Convolution vs. constraint method

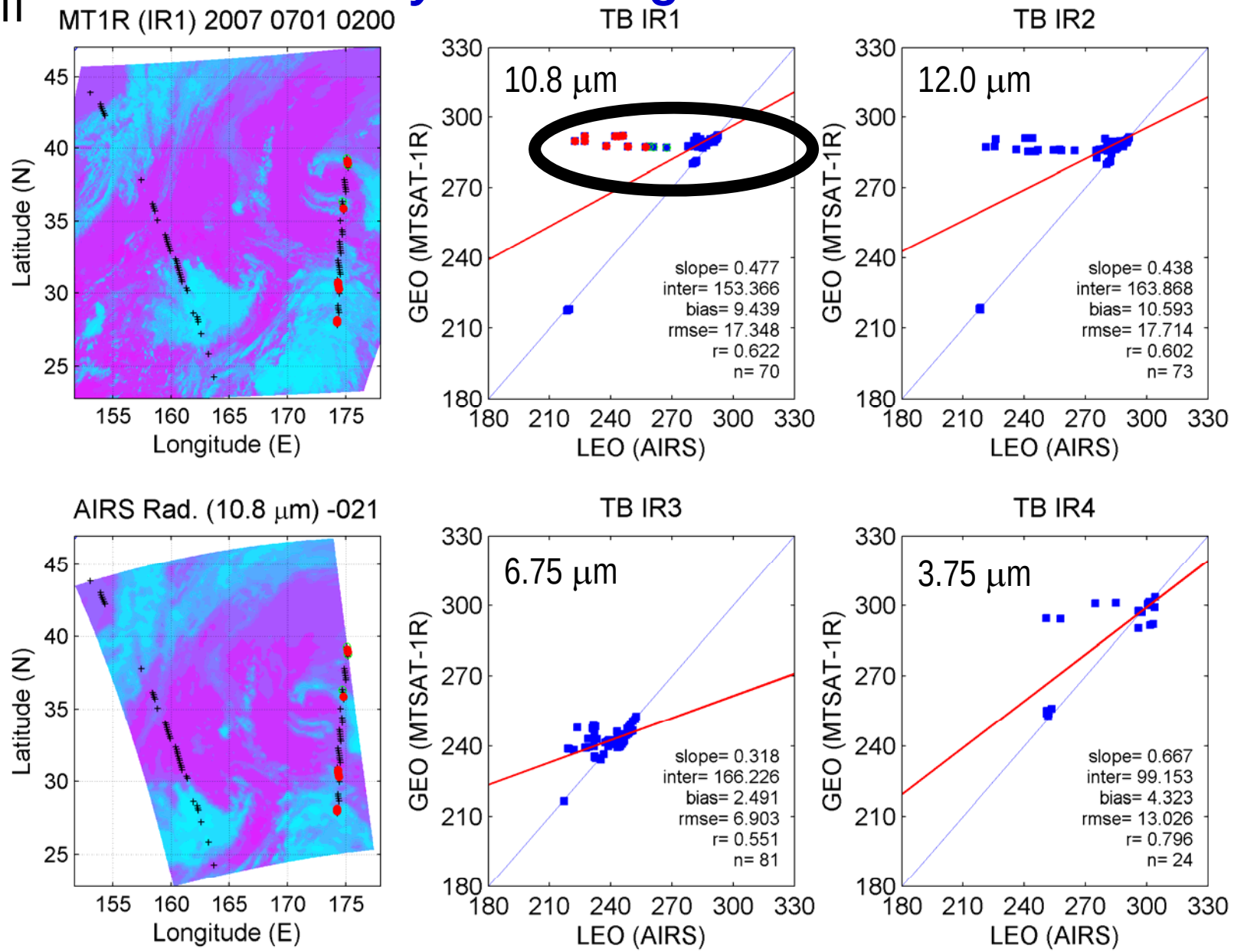
Uniformity check I

Relatively homogeneous cases($\frac{\sigma_{Area}}{m_{Area}} < 0.05$)



Uniformity check II

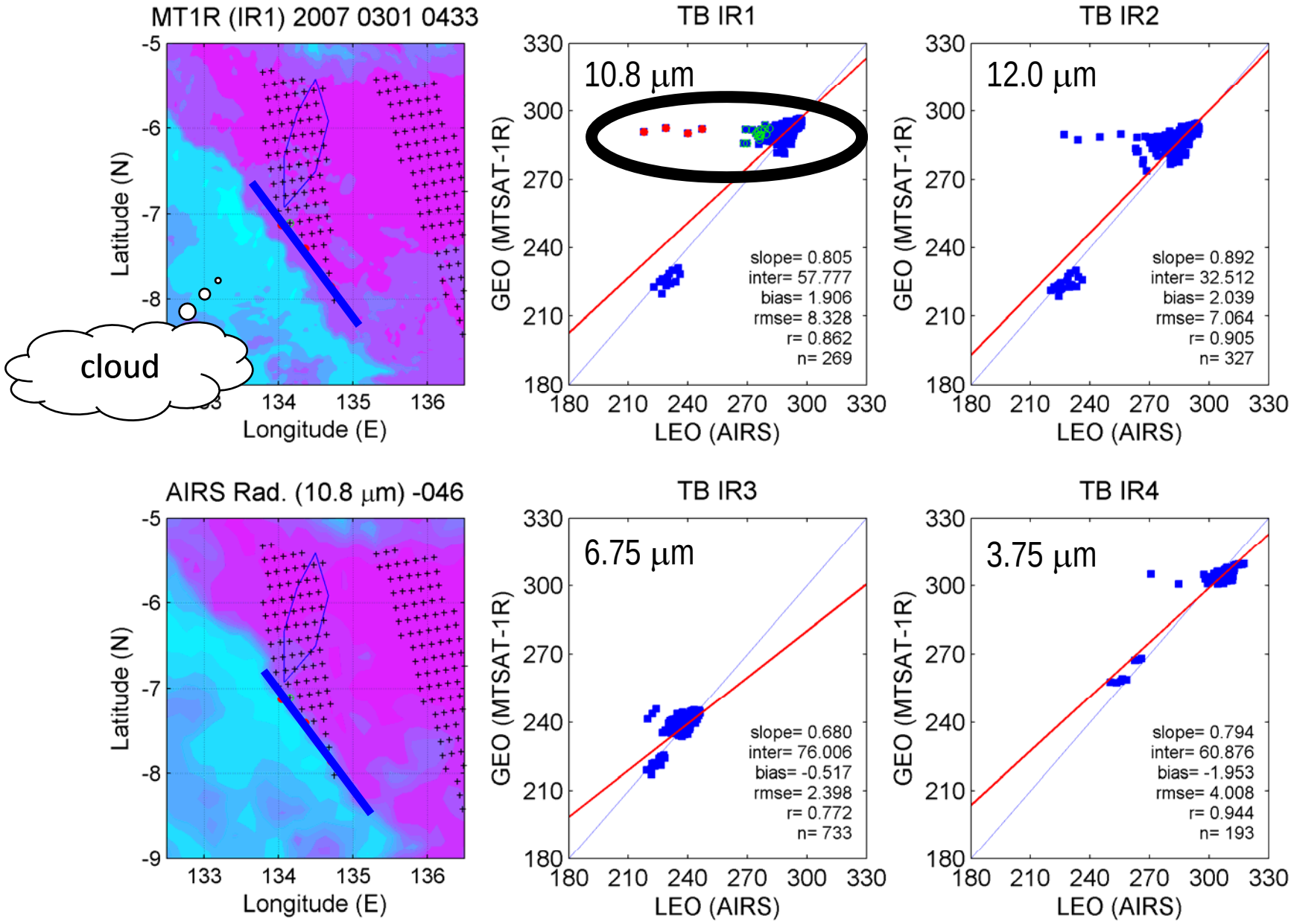
Relatively inhomogeneous cases



→ Filtering problem of Inhomogeneous scene for operation

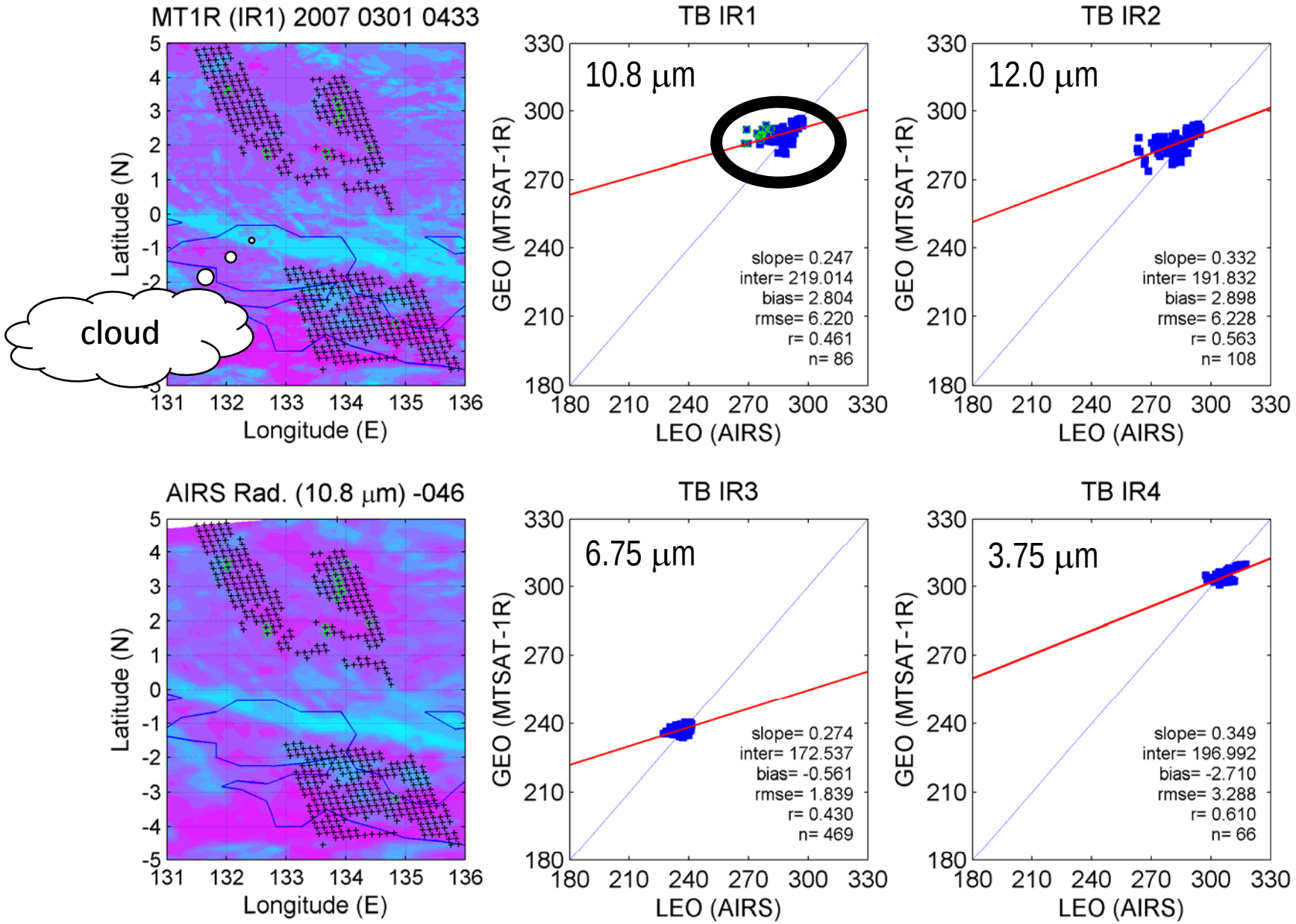
Time check I

Time Diff < 15 minutes



Time check II

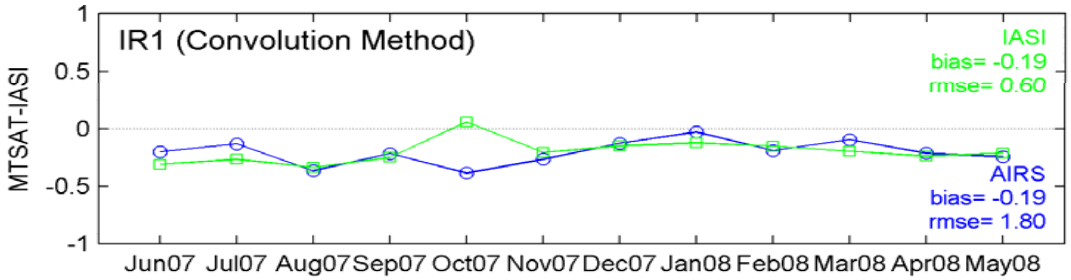
Time Diff < 5 minutes

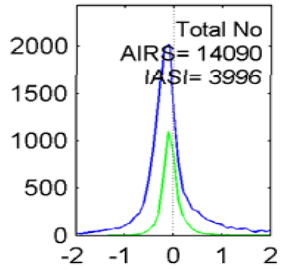


→Time difference conditions for fast moving cloud system

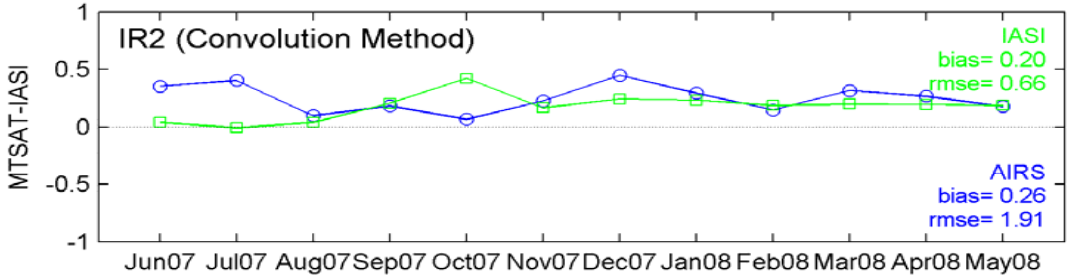
Time series of ΔT(MTSAT-AIRS/IASI) with Convolution method

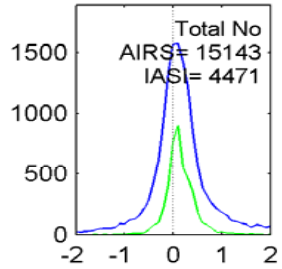
10.8 μm





12.0 μm

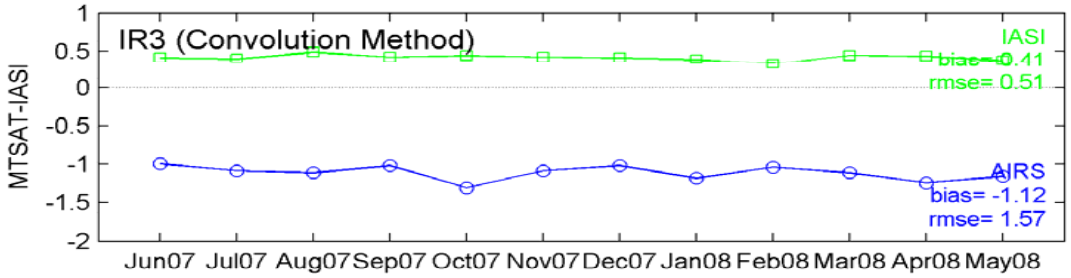


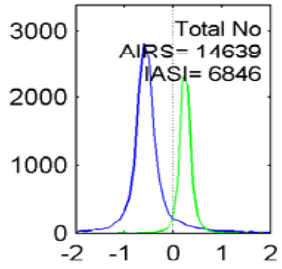


X-axis: bias

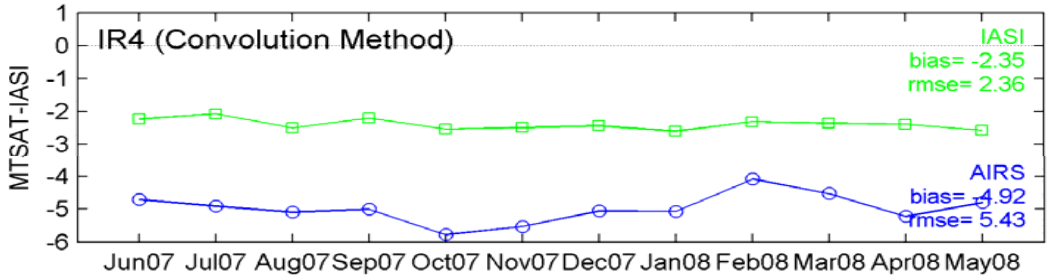
Y-axis: frequency

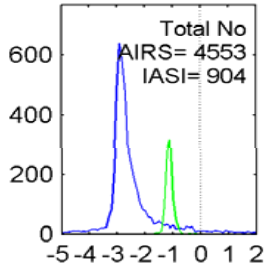
6.75 μm





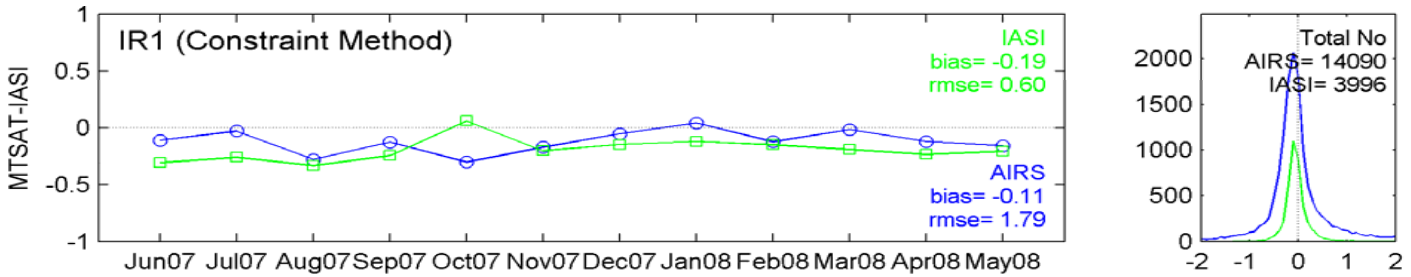
3.75 μm



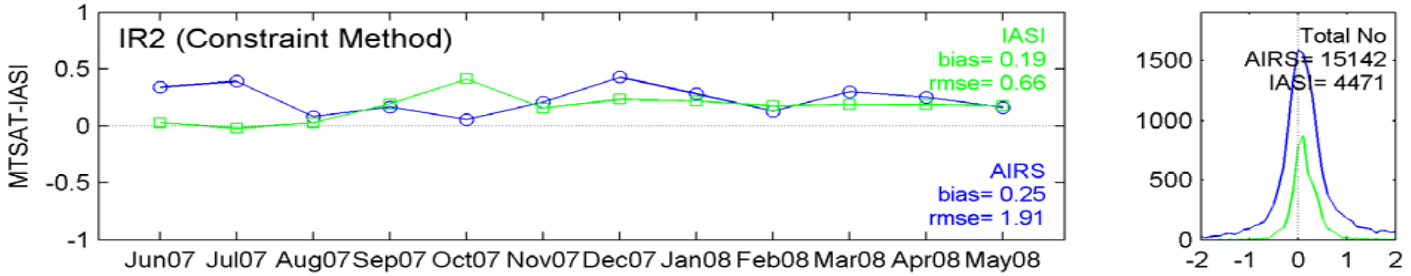


Time series of ΔT(MTSAT-AIRS/IASI) with Constraint method

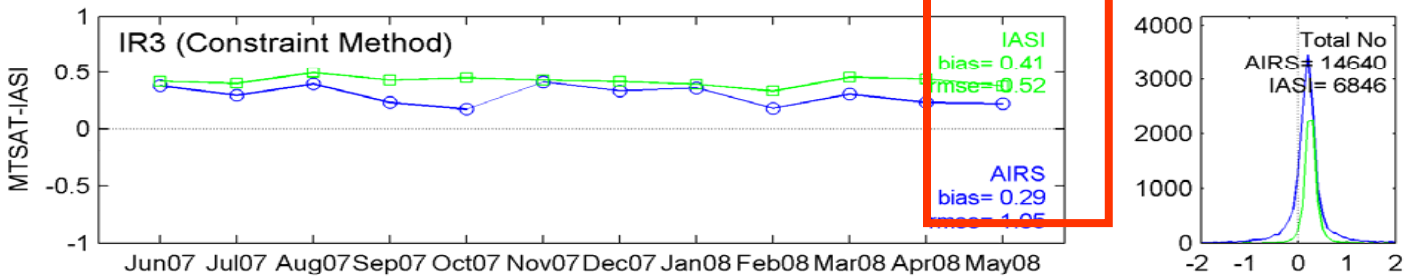
10.8 μm



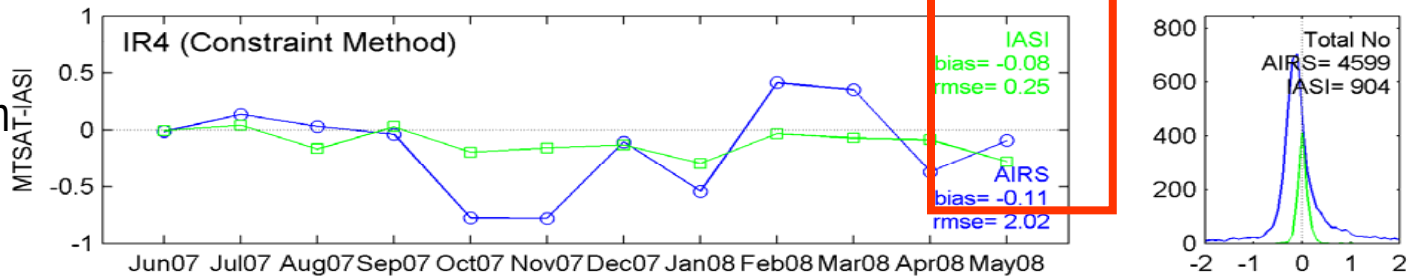
12.0 μm



6.75 μm



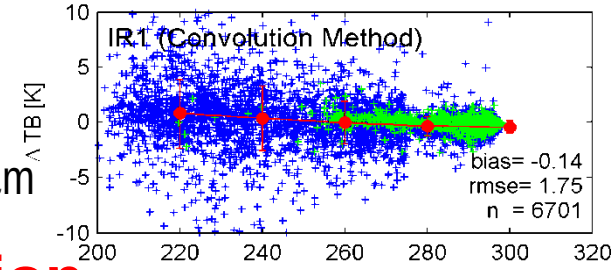
3.75 μm

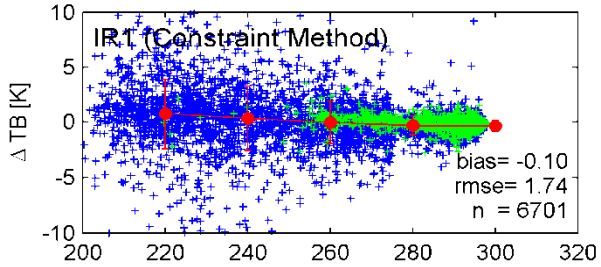


Convolution vs. Constraint method

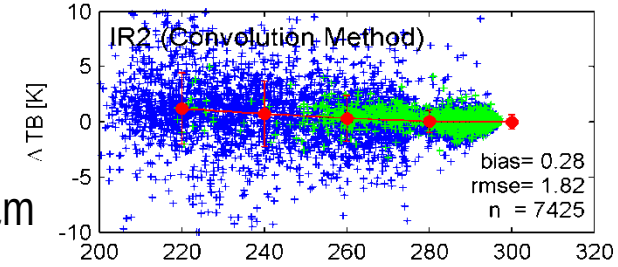
Convolution **Constraint**

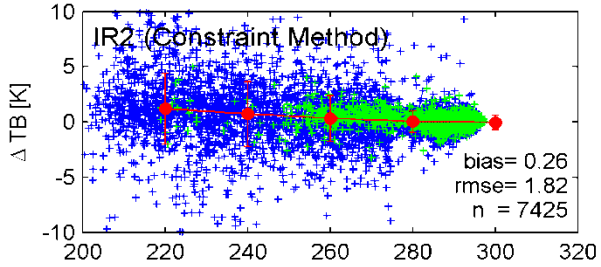
10.8 μm



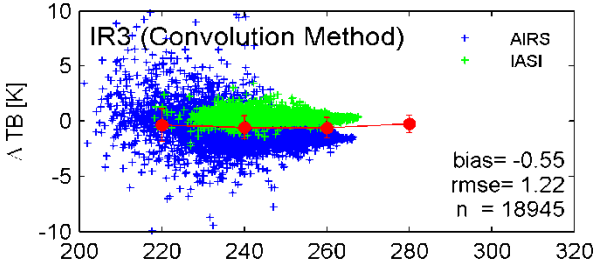


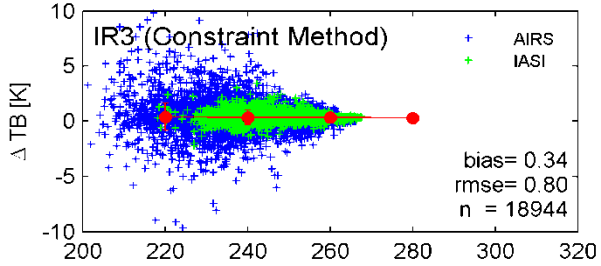
12.0 μm



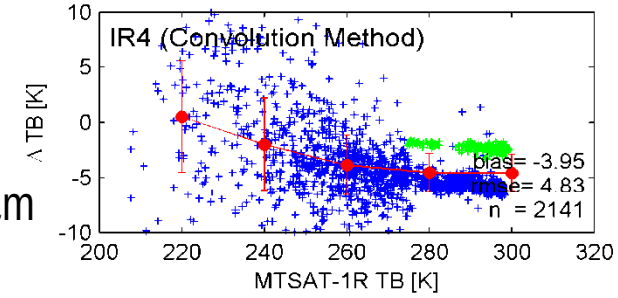


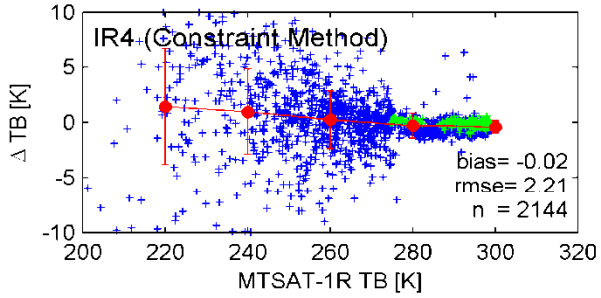
6.75 μm





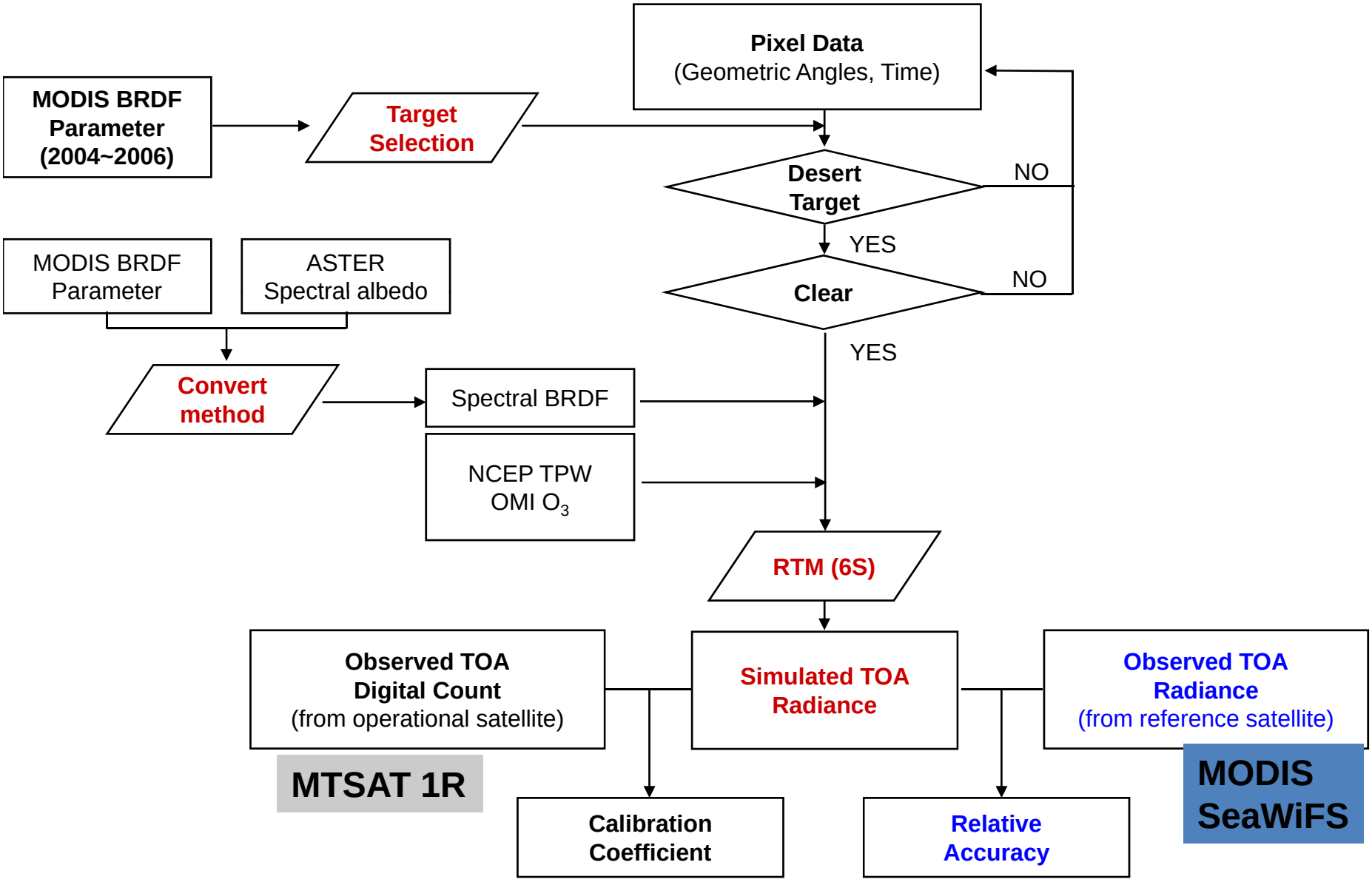
3.75 μm



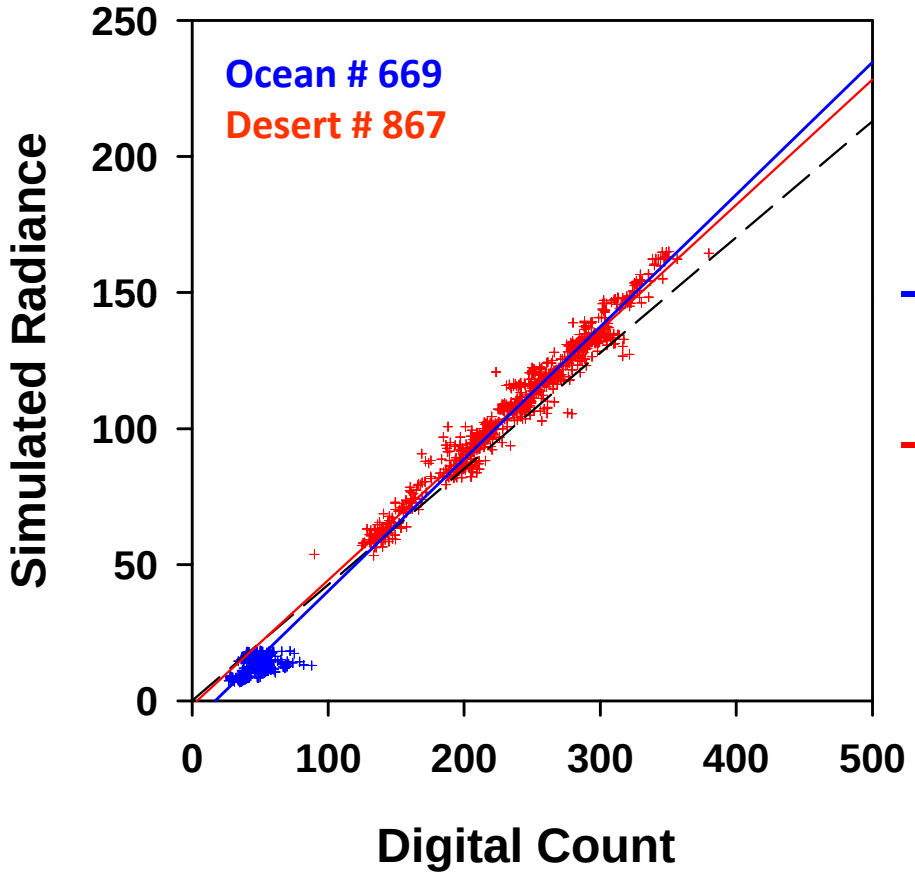


Vicarious Calibration for VIS

Desert target : Algorithm flow chart



Sample Results



Desert target
SZA < 60°

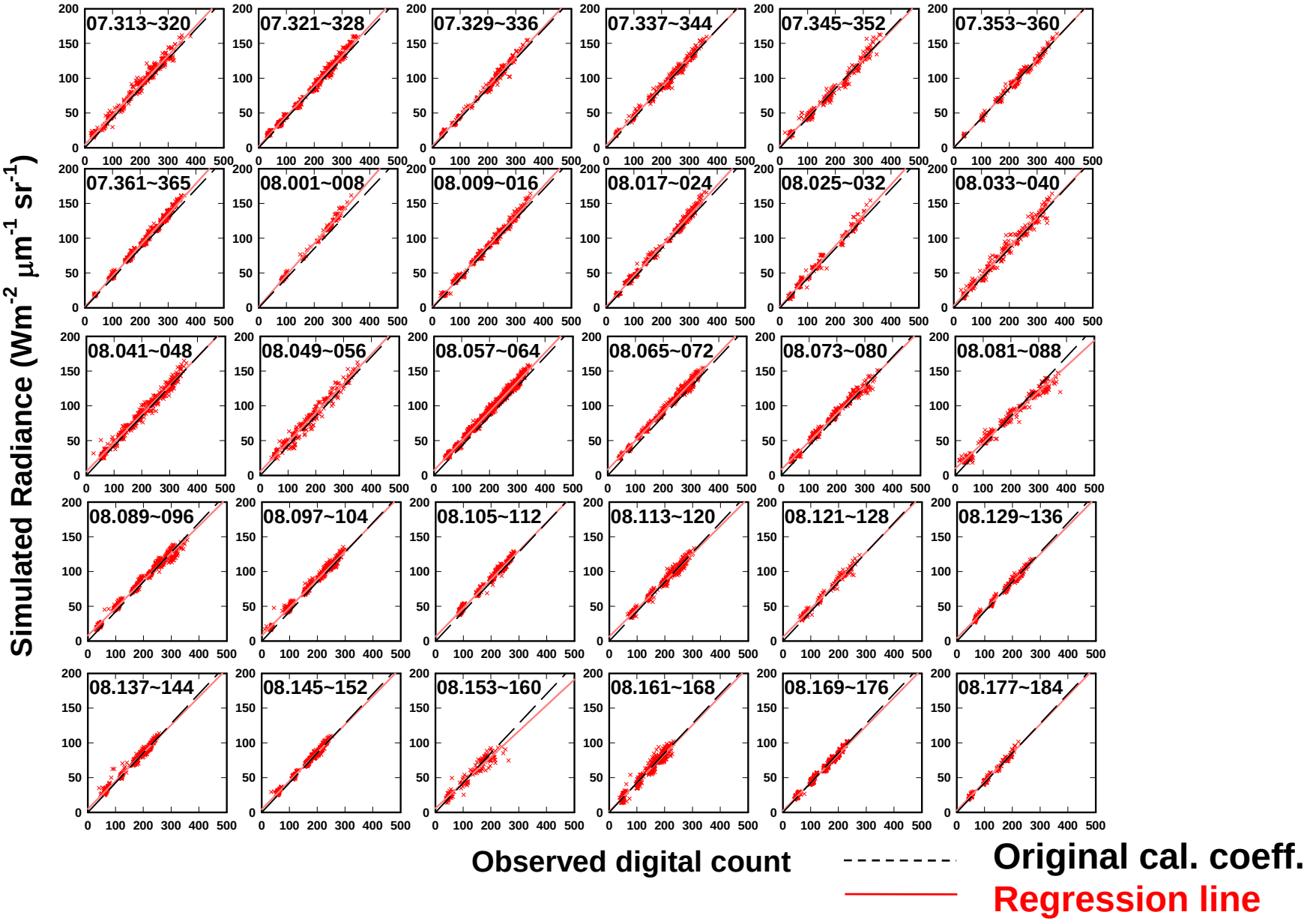
Regression line

Ocean + Desert
Y = 0.4855X – 8.1338, R^2 = 0.993

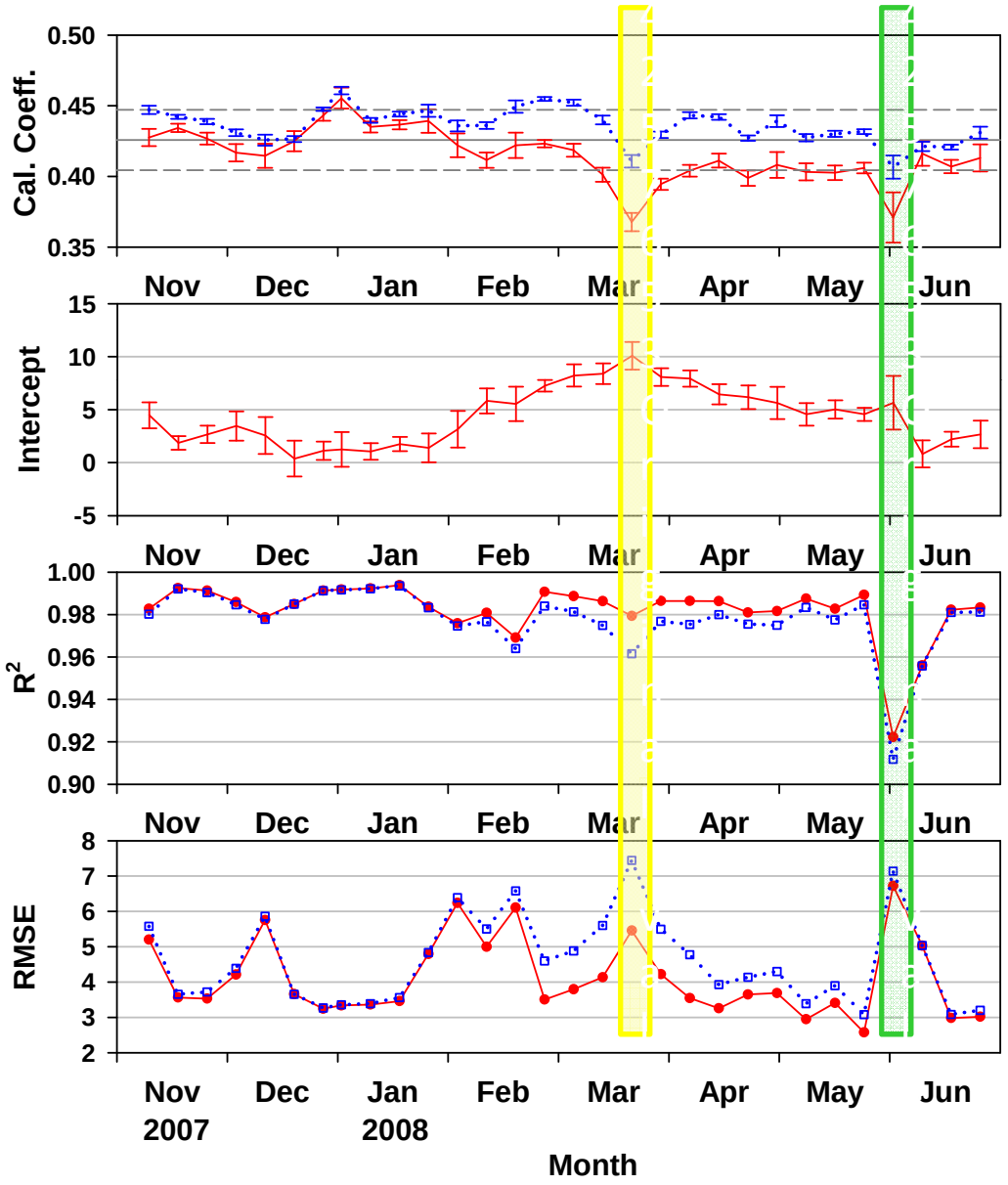
Desert only
Y = 0.4597X – 1.5667, R^2 = 0.969

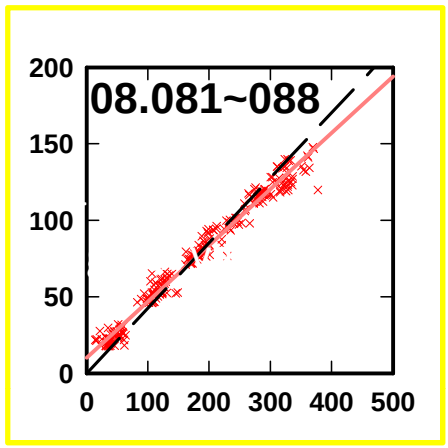
Ocean : 2007.11.15 ~ 11. 24
Desert : 2007.11. 9 ~ 11. 30

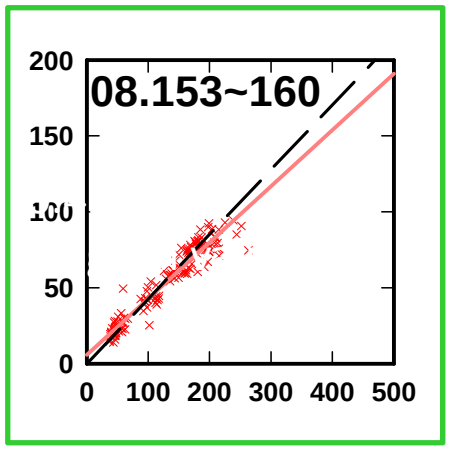
Results : Radiance Vs. Digital count



Results : Time series







Not fixed intercept

Fixed intercept as 0.0

Future Plan of KMA

- **Vicarious calibration for VI channel**
  - Monitoring and updating the desert target method
  - Collaborating with SNU for DCC target method
- **Establish the inter-calibration system for COMS with AIRS and IASI**
  - Implement the GSICS system for COMS
  - Monitor the long term stability of COMS detectors