Science-based methodologies for MRV System

- Constellation of ground-based, ship-borne, air-borne, and satellite-based measurements

Satellite measurements for MRV

Measuring
- Carbon Stock Estimation
  e.g.) LANDSAT (TM, OLI, TIRS), ALOS (PALSAR)

Reporting

Verification
- GHG concentration, variation, and Large-Point-Source Estimation
  e.g.) GOSAT (TANSO-FTS): $\text{XCO}_2$, $\text{XCH}_4$

T. Yokota, NIES GOSAT Project Leader, CGER, National Institute for Environmental Studies

(GOSAT “IBUKI” launched on January 23, 2009)
GOSAT Observation Results

Over Tropical South-East Asia

(GOSAT measurement locations over Tropical SE Asia during 2009.6-2015.5)
GOSAT Observation Results

Over Tropical South-East Asia

(GOSAT measurement locations over Tropical SE Asia during 2009.6-2015.5)

Clear-sky confidence level map over the lands in September 2014
Estimated from GOSAT TANSO-CAI data

(Cloudy) 0  Clear Sky Confidence Level  1 (Clear-sky)
Test Case : Application of GOSAT Data
- Outputs from 50-km Resolution Model Optimized by GOSAT data -

- Anomaly of CO$_2$ uptake among the years can be detected by a flux estimation model (BEAMS) of 50 km resolution with optimized regional biomass estimates using GOSAT data
Plan of Ground-based Measurements:
3 sites in/around Bogor, Indonesia

- Measurement parameters expected: CO₂, CH₄, O₃, etc....