Overview
As part of JAXA’s Kyoto and Carbon Initiative, our team is utilizing PALSAR observations to monitor land use/cover patterns, and model greenhouse gas emissions.

Project Objectives
• Map rice paddy extent for Monsoon Asia using multi-temporal Alos PALSAR Mosaics and ‘Strips’
• Characterize agro-ecological paddy attributes including hydroperiod, crop calendar, cropping intensity using K&C products
• Develop regional and continental scale products of rice paddy attributes, land use patterns, and land use cover change by integrating PALSAR products, MODIS, and Landsat

ALOS PALSAR data
• FB Mosaic Products (FBS/D; HH & HV)
• Multi-temporal ScanSAR HH Strips Slant & Ground Range Products
• Multi-temporal ScanSAR Stamps
• AUIG FBS/D used for training & scaling

Other Data Sources
• GLS & Landsat 5 TM mosaics
• MODIS 8-day products
• ASTER DEM
• Geo-field photos
• Soils, Climate, Management (DNDC)

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Indonesia Rice Mapping Efforts
• Using to improve HPAI forecasting by enhancing rice paddy activity monitoring; events occur when people, poultry, and waterfowl mixed in paddy regions
• Applying ‘operational’ approaches
• Regional products include rice paddy extent, hydroperiod, cropping intensity, & crop calendar

Monsoon Asia LCLUC Continental Products
• Executing Classification and Regression Tree (CART) approach for land use /cover mapping across large areas
• Merging K&C Strips, Mosaics, & Landsat
• Four regional training areas (below)

Recent (2010) field research locations and validation campaign routes

US Rice GHG Emissions
• Drive DNDC model with PALSAR products

Field campaigns completed
• Poyang Lake, China 2008/2009
• India 2010
• Java, Indonesia 2010
• Thailand 2009-2010
• Georeferenced field photos available to science community @ www.eomf.ou.edu

Recent papers
4. Torbick et al 2010. Integrating SAR and optical imagery for regional mapping of agro-ecological paddy attributes in the Poyang Lake Watershed, China. CJRS.