

PALSAR mosaics for mapping forest cover loss in Indonesia from 2007 to 2010

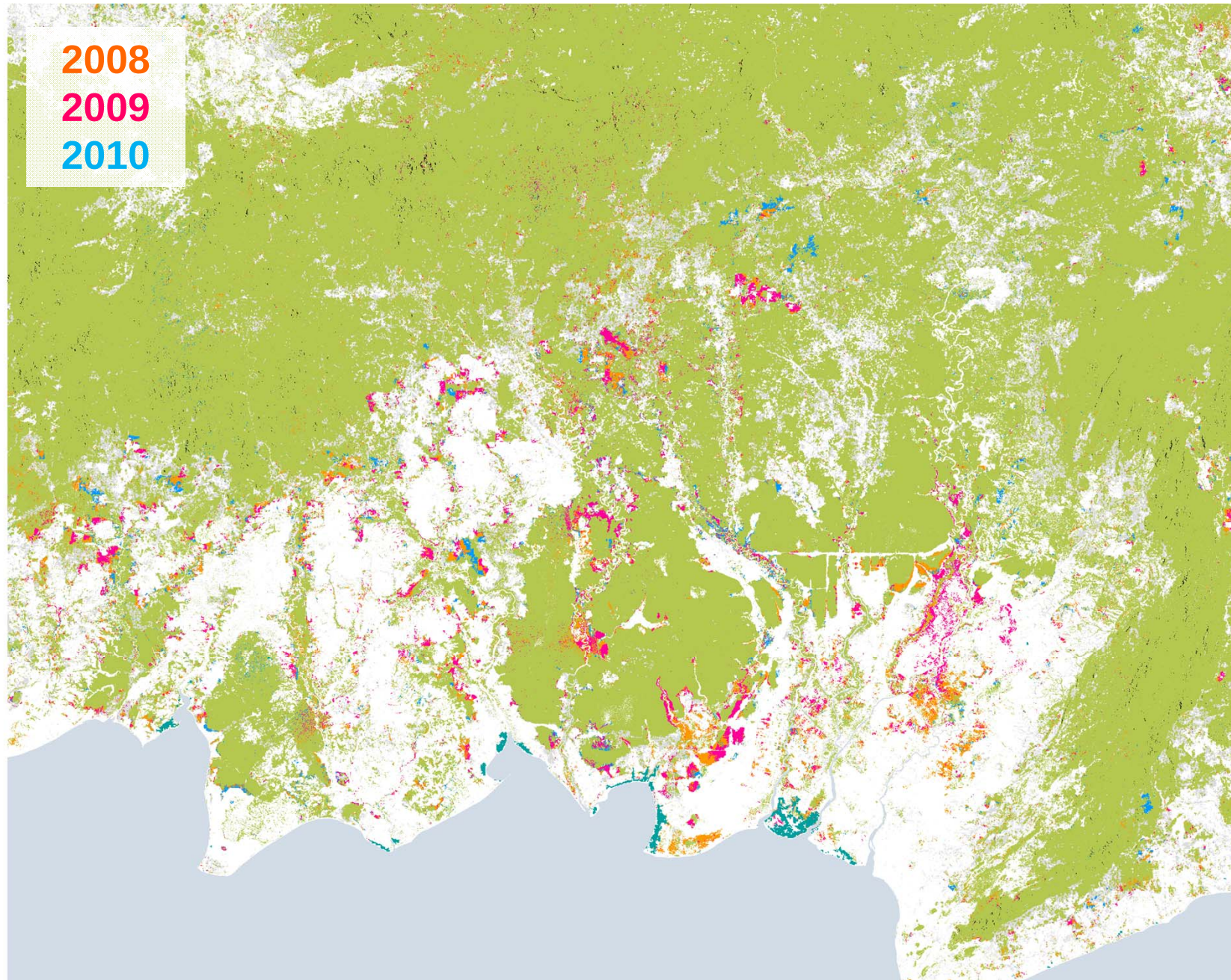
Takeshi Motohka



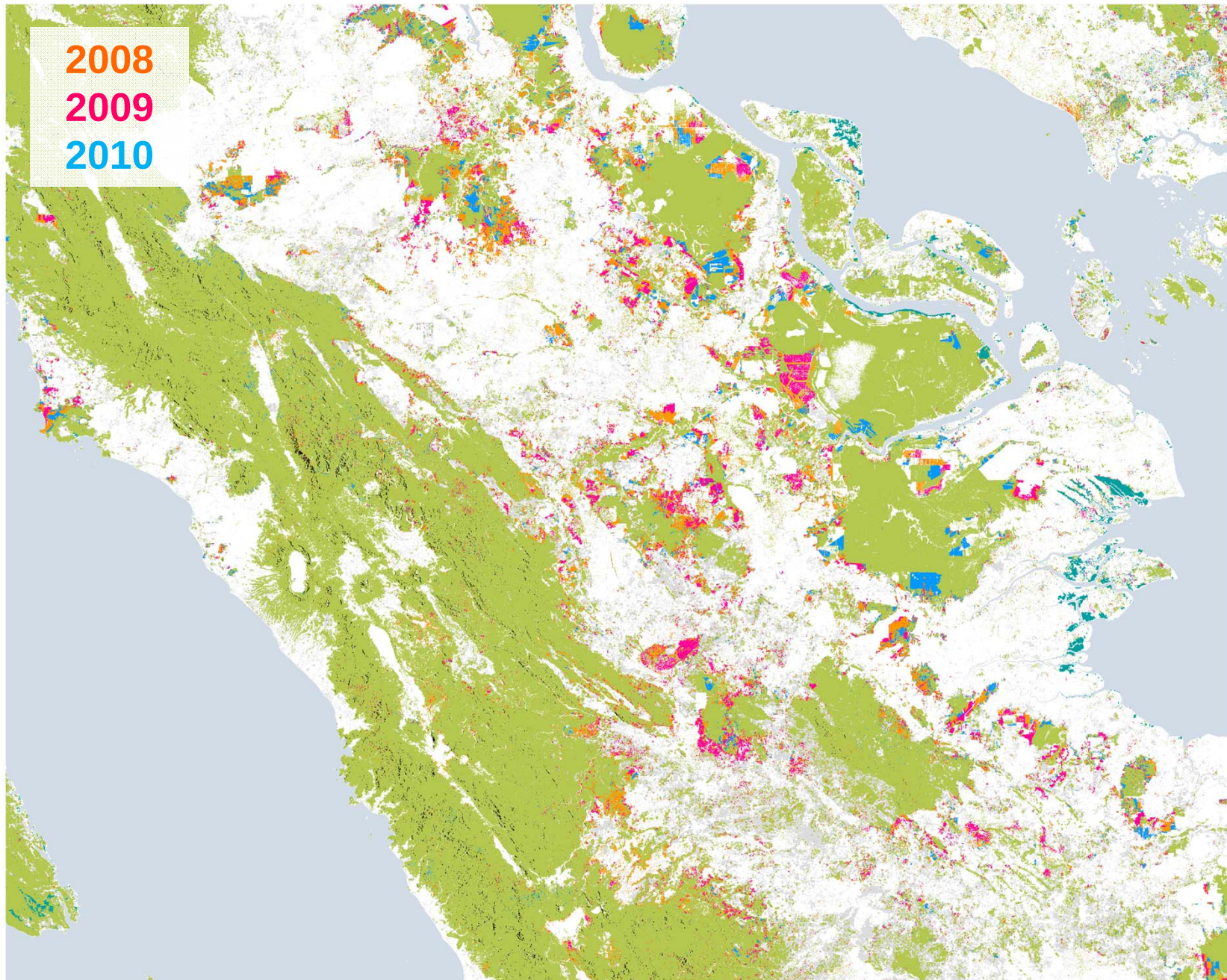
Forest cover basemap: PALSAR mosaic 2007 + GLOBCOVER 2006

Forest loss detection: Thresholding to PALSAR HV gamma-naught changes from 2007 to 2010

Central Kalimantan

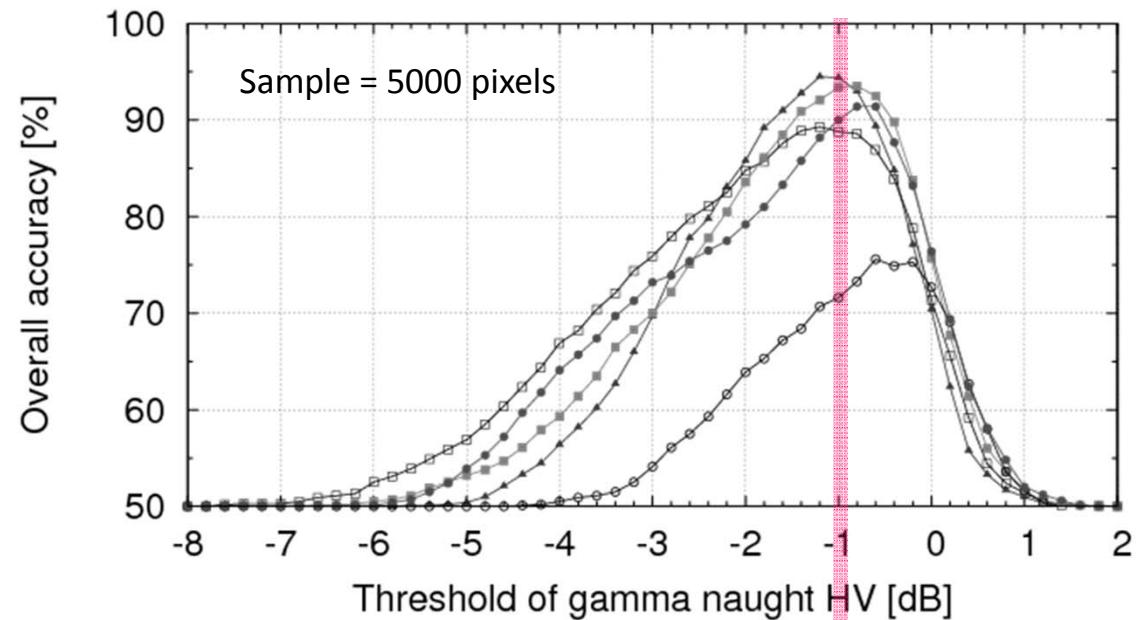


Central Sumatra

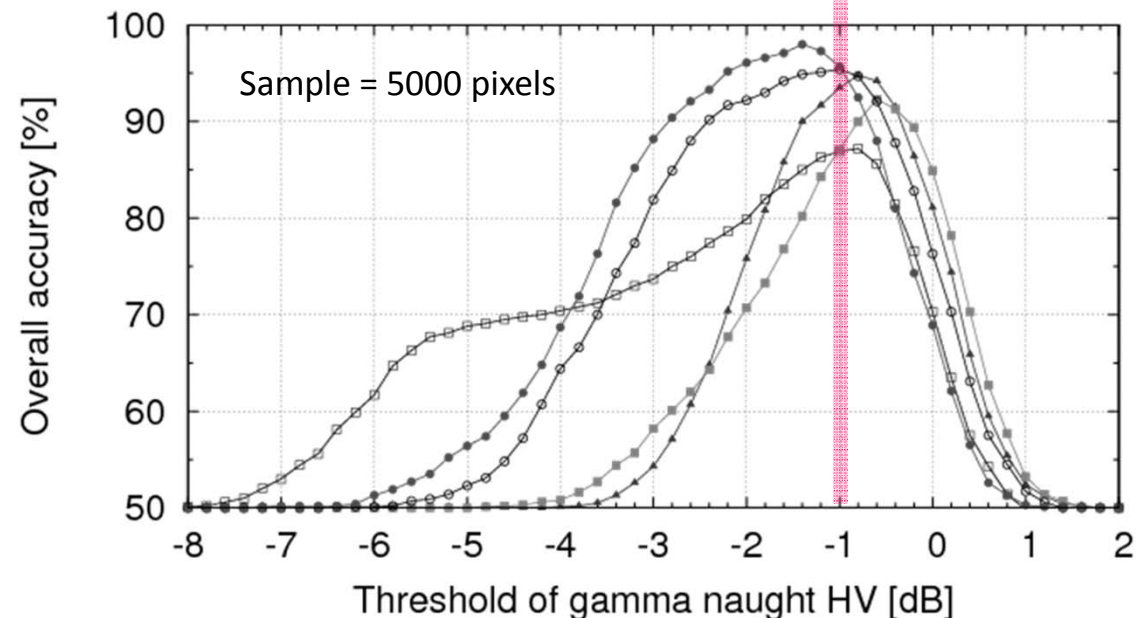


Forest loss detection accuracy --- Riau province, Sumatra

Mineral soil area

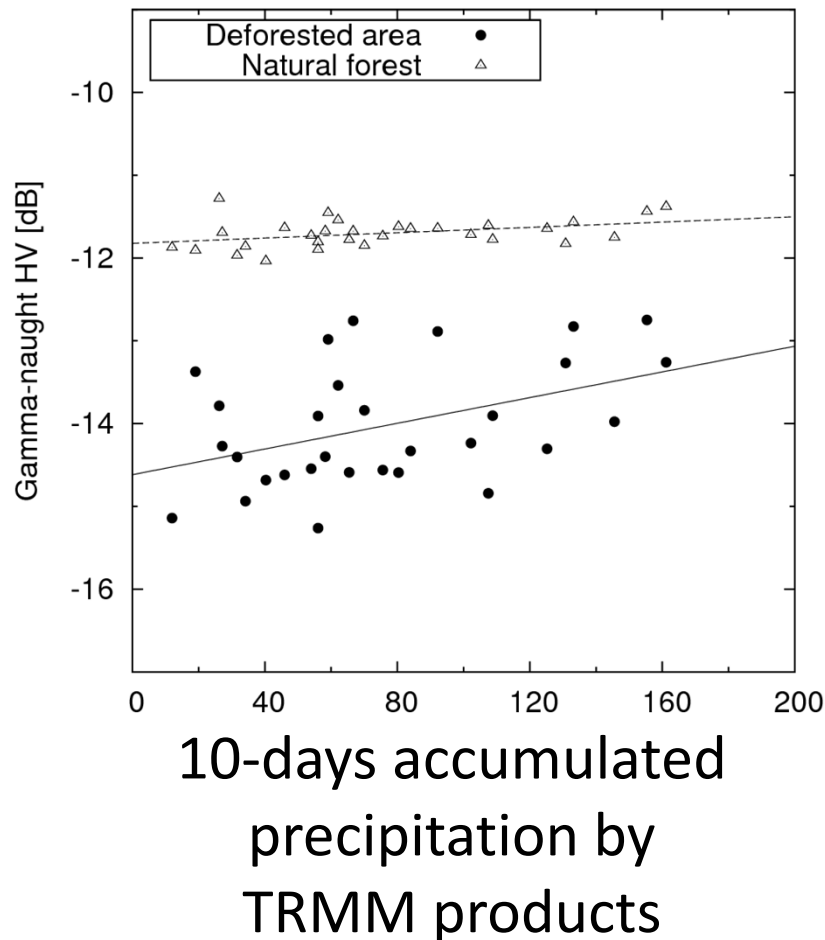


Peat swamp area

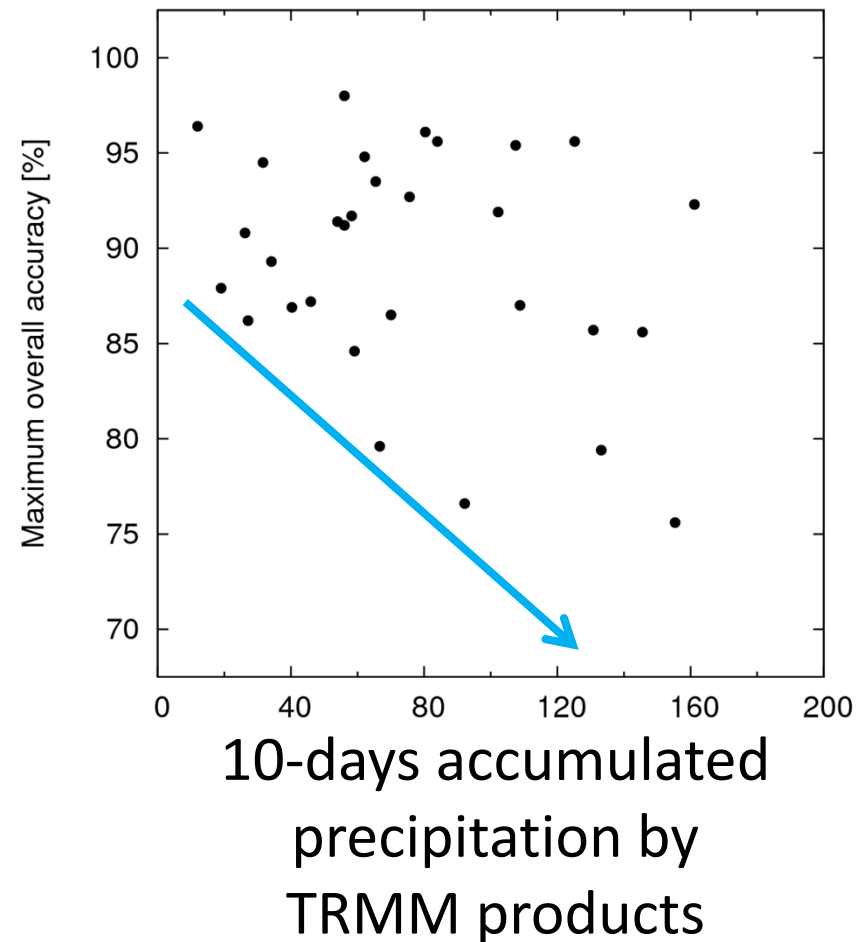


Moisture effects on forest change detection with PALSAR gamma-naught

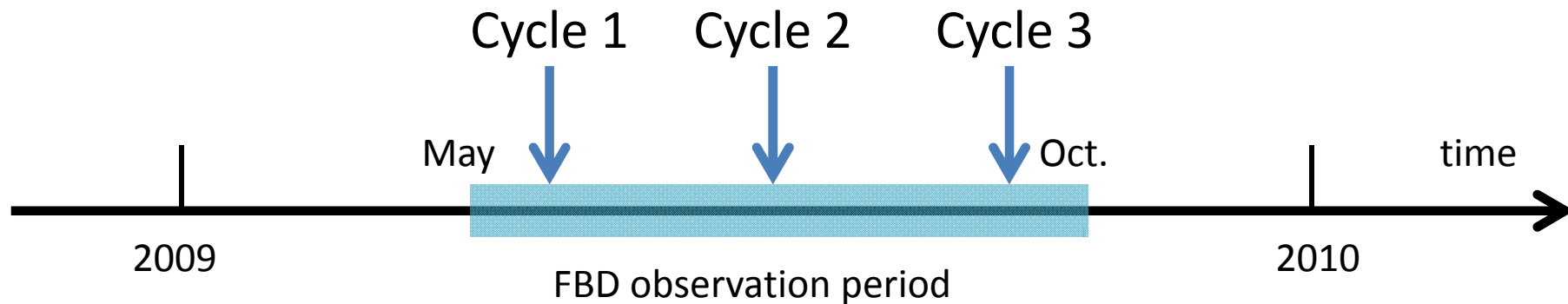
Gamma-naught HV



Overall accuracy



Integration of multi-temporal images in a year



	n	Average	SD	Maximum	Minimum
Accuracy of -1 dB threshold (each mosaic)	30	87.6%	7.1%	96.4%	71.3%
Accuracy of -1 dB threshold (yearly integrated)	18	91.3%	3.7%	96.4%	83.4%

Annual change of forest loss area (1000 t/ha)

	Loss, 2007-2008	Loss, 2008-2009	Loss, 2009-2010
Sumatra	661	898	452
Java	73	87	10
Kalimantan	467	845	363
Sulawesi	171	284	39
Papua	179	129	150
Indonesia Total	1,634	2,342	1,041

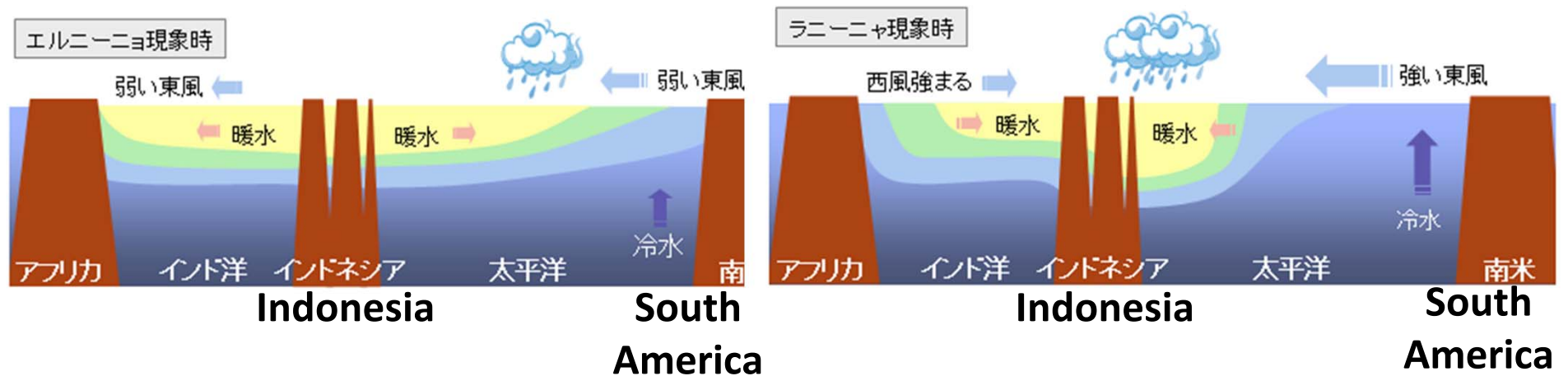
El Nino
= A lot of
forest fires

La Nina
= Few
forest fires

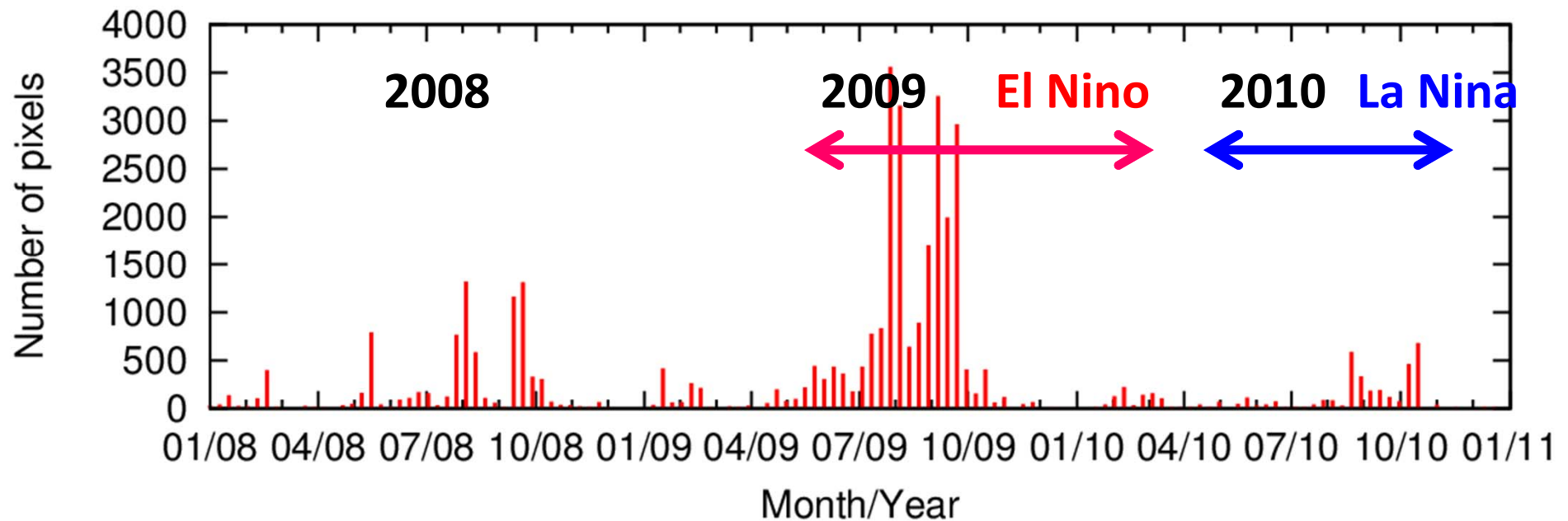
Values from other researches:

Source	Year	Annual loss (1000ha/yr)
FRA2010	2003-2006	685
Forest Watch Indonesia (LANDSAT)	2000-2009	1,670
Hansen et al., 2009 (MODIS)	2004-2005	1,170

El Nino

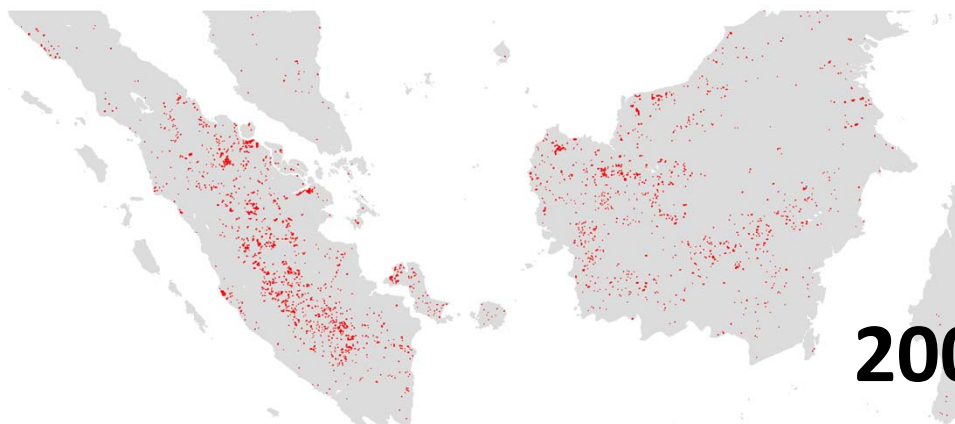


Number of forest fire by MODIS

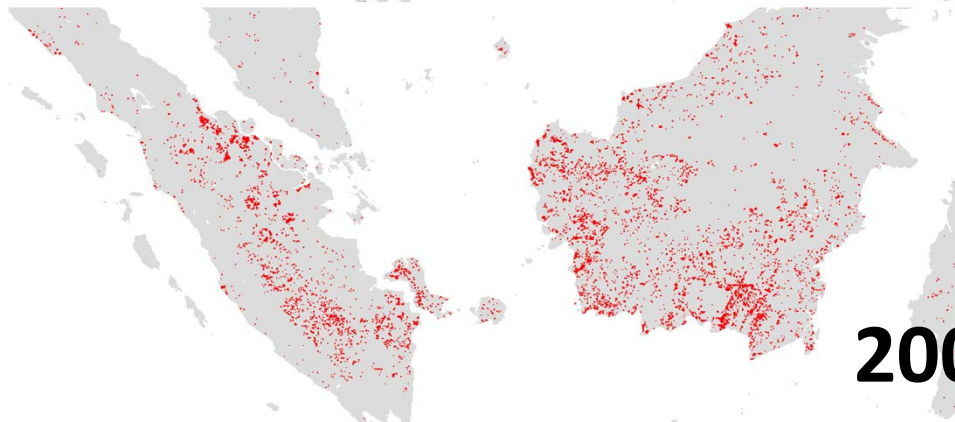
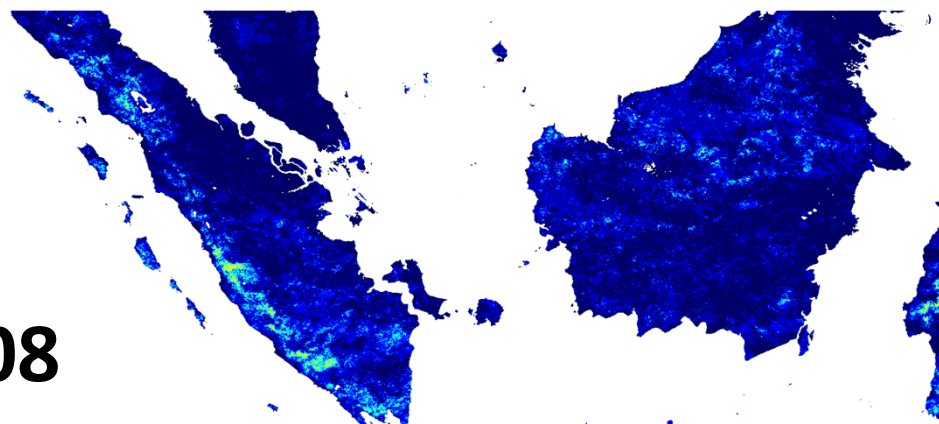


MODIS forest fire

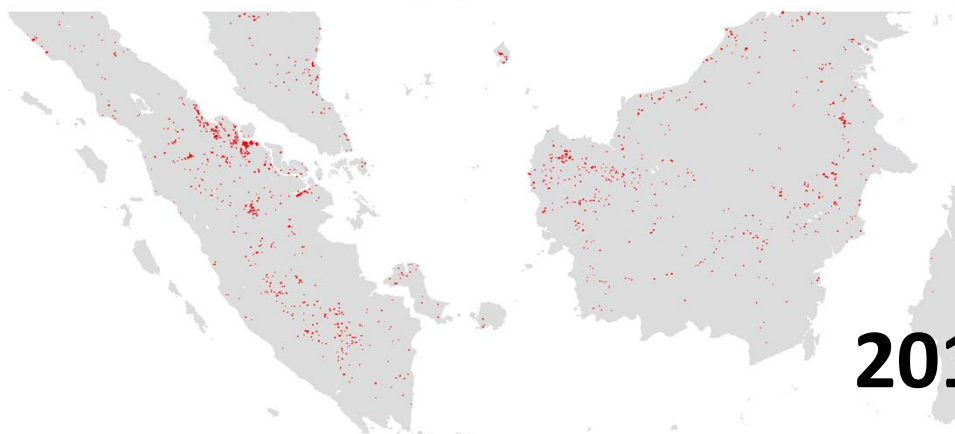
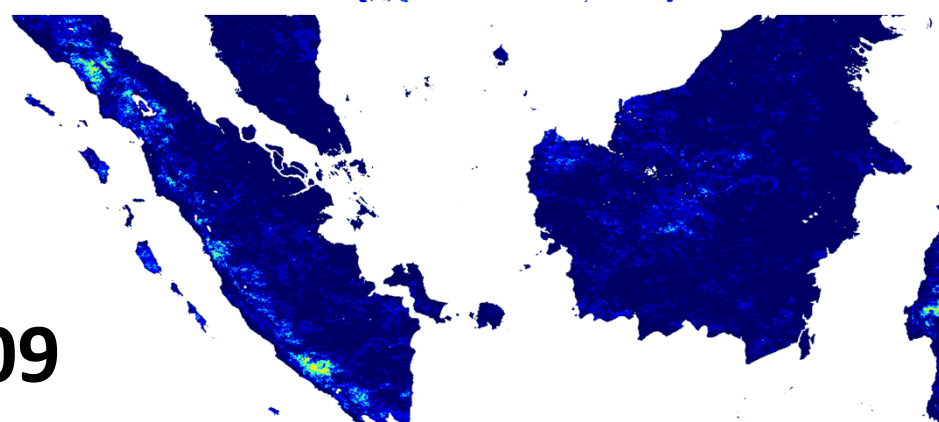
Cloud cover



2008



2009



2010

