

## New insight into recent vegetation changes in Eastern Siberia using Satellite Images

# Hidetaka Sakai[1]; Akihiko Kondoh[2]; Rikie Suzuki[3]

[1] Life and Earth Sci., Chiba Univ.; [2] CEReS, Chiba Univ.; [3] FRCGC, JAMSTEC

<http://www.cr.chiba-u.jp/>

Vegetation Index datasets created in mid-1980's produces many valuable outcomes. Global vegetation classification(e.g. Justice et al, 1985) and the dynamic relationship between seasonality of NDVI and atmospheric CO<sub>2</sub> concentration(Tucker et al., 1985) are the distinguished achievements. After 1990's, accumulation of long term satellite data enables the analysis vegetation change in decadal scale.

One of the leading papers is Myneni et al(1997), which revealed the greening trend of vegetation in northern hemisphere. Many papers describe the increase in vegetation activity in Boreal forest, and it is explained by the extension of growing season length accompanied by the early snow melt possibly due to global warming. However, the verification of the geographical extent of activated area using available thematic maps on vegetation, topography, etc. is not enough. Especially, the boundary zone of different biomes should be inspected for vegetation change study.

In this study, PAL(Pathfinder Advanced Very High Resolution Radiometer Land data sets) was used to recognize vegetation change in Eastern Siberia. Source of PAL is AVHRR(Advanced Very High Resolution Radiometer), which has four spectral bands correspond to visible, near-infrared, and thermal infrared regions. To detect vegetation change, annual integrated NDVI during growing season and annual maximum NDVI are employed to calculate 19 years trend from 1982 to 2000. The resultant maps are compared to Olson World Ecozone map and vegetation map of the republic of Sakha.

As a result, the increasing trend of annual integrated NDVI is confirmed and the area correspond with the region of Boreal(Taiga) forest. The area with increasing NDVImax is different from the area of increasing annual integrated NDVI. The area located to the north of Boreal forest zone, and corresponds to