--TITLE: North American Tundra NEE modeled from MODIS data.

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---DATA SET OVERVIEW:

This data set provides growing season Net Ecosystem CO2 exchange (NEE) between tundra ecosystems and the atmosphere for North America. Data are produced over the growing season (Julian Day 177 - 241) for the years 2003 - 2005. The data are modeled following the approach of Loranty et al [2011], using MODIS observations. Inputs include MODIS Land Surface Temperature [LST: *Wan et al.*, 2002], Normalized Difference Vegetation Index [NDVI: *Huete et al.*, 2002], and Photosynthetically Active Radiation [PAR: *Liang et al.*, 2006]. Leaf Area Index is a required model input, and was derived from NDVI using tundra specific transfer functions [*Shaver et al.*, 2007; *Street et al.*, 2007; *Loranty et al.*, 2011]. These preliminary data have been validated for only one site at Daring Lake, Canada.

---INSTRUMENT DESCRIPTION:

All data inputs are derived from NASAs MODerate resolution Imaging Spectroradiometer.

---DATA COLLECTION and PROCESSING:

See above description and associated references for NEE modeling. MODIS data were not screened for quality. Missing data were gap-filled linear interpolation between two nearest data

points. Daily values of NEE were derived using daily PAR, 8-day LST and 16-day NDVI/LAI. ST and NDVI/LAI were held constant over their respective compositing periods.

---DATA FORMAT:

Data for each year (2003-2005) are in separate GeoTIF files. Each file contents a map of growing season tundra NEE (g C m2) where tundra is defined according to treelike in the Circumpolar Arctic Vegetation Map [CAVM: *Walker et al.*, 2005].

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---DATA REMARKS:

This data set is preliminary in nature and should be used with caution. Nonetheless it is unique, and may provide useful for comparison with other models or observational data sets.

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