README Documentation of GNSS-RO Planetary Boundary Layer Heights (PBLH)

Input File Name: pblh_nepac_15N-40N_2006-2020_skew2.dat

General Description:

These are the PBLH data used in the manuscript entitled, "Spatiotemporal Variability Relationships of Shallow Cloud Height and Planetary Boundary Layer Height Over the Northeast Pacific Using Satellite Observations and Reanalysis." They include the percentiles [5^{th} – 95^{th}, in increments of five], the number of observations for each month, as well as the skewness. These data are used to quantify the relationships between PBLH and lapse rate, ω_{500}, temperature at 700 hPa (T_{700}), and CTH in Figure 3, time series of percentiles of PBLH, percentiles and standard deviation of PBLH over the Northeast Pacific, as well as relationships of percentiles of PBLH with percentiles of CTH in Figure 4, time series of anomalies of PBLH (PBLH', in which the annual cycle is removed) as well as lead-lag correlations of PBLH with Oceanic Niño Index (ONI) and Pacific Decadal Oscillation in Figure 6, paired lagged correlations with various climate index variables and atmospheric temperature in Figure 7, and of temporal modes of variability using Fast Fourier Transform (FFT) analysis in Figure 8. Full details are provided in the manuscript.

Format of Input Data File (text file):

Format for each line (each position represents a unique column):

YEAR MONTH #Obs 5^{th} 10^{th} 15^{th} 20^{th} 25^{th} 30^{th} 35^{th} 40^{th} 45^{th} 50^{th} 55^{th} 60^{th} 65^{th} 70^{th} 75^{th} 80^{th} 85^{th} 90^{th} 95^{th} Skewness

#Obs: Number of Profiles for each month within the Northeast Pacific (15°N-40°N, 150°W-115°W, excluding land)
5^{th} – 95^{th}: Percentiles of PBLH, in increments of five, for each month (km)
Skewness: Skewness of PBLH for each month