TotalCounts.csv

This file contains the median number of particle counts (particles / mL) in each size bin across three coulter counter measurements. The first column is the minimum particle diameter (µm). The maximum particle diameter of each bin is the minimum particle diameter of the next bin.

Volume.csv

This file contains the total particle volume measured in each bin. This is calculated simply by multiplying the bin counts by the spherical particle volume of each bin’s diameter. So: . This is a more useful that total counts because it reflects the contribution of each bin to the total particle concentration. Speaking of concentration, to calculate concentration from volume, just multiply volume by 2.6 \* 1e6 / 1e12 \* 1e3. This converts from volume (µm3 / mL) to concentration (µg / L ~~ ppb) assuming a particle density of 2.6 g/cm3.

Sample Overview.csv

This contains statistics for each sample, including the total number of particles, the proportion of coarse (≥4.5µm) particles to total particles, the total dust volume, the total dust concentration (which is just scaled dust volume), and the mode particle size.

The mode particle size is a first stab at finding a robust way of selecting particle mode. Plot almost any volume distribution for one sample and you will understand why. The single bin with the higher mode is not necessarily the true mode. I calculated mode by taking a moving mean over a variety of windows, and by fitting a spline over a variety of spline tightness parameters, and then taking the median mode selection from those two methods.