

All of the data used in the Suski et al. 2018 paper “Agricultural harvesting emissions of ice nucleating particles” are provided as tab delimited text files. Please contact Kaitlyn Suski (ksuski2277@gmail.com) and Paul DeMott (Paul.Demott@colostate.edu) if you plan to use this data in any publication.

Data were collected in the following locations on the following dates:

Sample	Location	Latitude, Longitude	Elevation (m)	Sampling Date
Pre-Soybean Harvest	Colby, KS	39.394, -101.066	966	10/14/14
Soybean	Colby, KS	39.394, -101.066	966	10/14/14
Sorghum	Colby, KS	39.394, -101.066	966	10/15/14
Wheat 1	Colby, KS	39.394, -101.066	966	6/30/15
Wheat 2	Colby, KS	39.394, -101.066	966	7/1/15
Corn	Lingle, WY	42.126, -104.403	1309	11/9/15

CFDC Data: There are 4 files included: 1 Read_Me file and 3 data files (Beet_Soil_Heating_Data.txt, Harvest_CFDC_Data_Parameterizations.txt, Harvest_CFDC_Data_w_Heat.txt). All data files contain processed, quality-controlled data.

The Continuous Flow Diffusion Chamber (CFDC) was used to sample air during harvests. The CFDC data is processed and includes times when the concentrator was used indicated by the concentrator flag = 1 and when it was not used (concentrator flag = 0). The data is given as the measured Ice Nucleating Particle (INP) concentrations as well as the concentrator factor (CF) corrected INP concentrations (INP_CF). It is best to use the concentrator corrected data. N500 (the number of particles greater than 500 nm) is also given as the measured and concentrator corrected values. The Significance flag indicates if the data pass the statistically significant test detailed in the paper (1 = Significant, 0 = Not Significant). Background was subtracted using the method described in *Schill et al.* [2016]. Uncertainty is given in the data set. Periods that were sampled through the heating tube are indicated by a temperature in the Heat column. Values in the Heat column represent the temperature of the heating tube in degrees Celsius. The average Wideband Integrated Bio Sampler (WIBS)-measured Fluorescent Biological Aerosol Particles (FBAP), FP3 (particles that fluoresced strongly in channel FL1 and weakly or not at all in channels FL2 and FL3), and fluorescent particles (FP) particle concentrations are also given. The ice parameterization D10 [*DeMott et al.*, 2010], D15 [*DeMott et al.*, 2015], and T13 [*Tobo et al.*, 2013] are also used to predict INP concentrations based on n500 and FBAP.

Beet_Soil_Heating_Data.txt Variables:

DateTime (CST): Time data was collected in Central Standard Time

DateTime: Time data was collected in seconds past midnight

AerT (C): CFDC Operating Temperature in degrees Celsius

Error_AerT (C): Error in CFDC Operating Temperature in degrees Celsius

SSw (%): Supersaturation with respect to water in the CFDC

Error_SSw (%): Error in supersaturation with respect to water in the CFDC

INP (#/L): Ice nucleating particle concentration in number per liter

error_INP (#/L): Error in ice nucleating particle concentration in number per liter

fINP: Fraction of particles that act as INP

fINPerror: Error in Fraction of particles that act as INP

n500 (#/L): Number of particles greater than 500 nm in number per liter of air

error_n500 (#/L): Error in number of particles greater than 500 nm in number per liter of air

Heating Tube Temp (C): Temperature of the heating tube upstream of the CFDC in degrees Celsius

Dust Type: Text variable describing the sample dust type

Harvest_CFDC_Data_Parameterizations.txt, Harvest_CFDC_Data_w_Heat.txt Variables:

DateTime (CDT): Time data was collected in central daylight time

DateTime: Time data was collected in seconds past midnight

AerT (C): CFDC Operating Temperature in degrees Celsius

SSw (%): Supersaturation with respect to water in the CFDC

INP (#/L): Ice nucleating particle concentration in number per liter

error_INP (#/L): Error in ice nucleating particle concentration in number per liter

fINP: Fraction of particles that act as INP

error_fINP: Error in fraction of particles that act as INP

n500 (#/L): Number of particles greater than 500 nm in number per liter of air

error_n500 (#/L): Error in number of particles greater than 500 nm in number per liter of air

Significance: 1 (significant) or 0 (insignificant) indicating if the data passed the statistical significance test outlined in the manuscript

Concentrator Flag: 1 (if concentrator was used) or 0 (if the concentrator was not used upstream of the CFDC)

CF: Concentration Factor calculated by dividing the n500 on the concentrator from the n500 off the concentrator.

INP_CF (#/L): Ice nucleating particle concentration divided by the CF in number per liter

CF_INPerror: Error in the ice nucleating particle concentration divided by the CF in number per liter

Heat (C): Temperature of the heating tube upstream of the CFDC in degrees Celsius

Location/Crop: Text variable describing the sample location or crop type

FP3 (#/L): The FP3 concentration measured with the Wideband Integrated Bio Sampler in number per liter of air

FBAP (#/L): The Fluorescent Biological Aerosol Particle concentration measured with the Wideband Integrated Bio Sampler in number per liter of air

FP (#/L): The Fluorescent Particle concentration measured with the Wideband Integrated Bio Sampler in number per liter of air

WIBS_Total (#/L): The number concentration of all particles measured with the Wideband Integrated Bio Sampler in number per liter of air

n500_CF (#/L): Number of particles greater than 500 nm divided by the CF in number per liter of air

D10 (#/L): The concentration of ice predicted using the D10 parameterization in number per liter of air

D15 (#/L): The concentration of ice predicted using the D15 parameterization in number per liter of air

T13 (#/L): The concentration of ice predicted using the T13 parameterization in number per liter of air

Data Set last modified on 1/30/18.