Thies Disdrometer

level 1

class spread in mm =
[0.125,0.125,0.125,0.25,0.25,0.25,0.25,0.25,0.25,0.50,0.50,0.50,0.50,0.50
,0.50,0.50,0.50,0.50,0.50,0.5,0.50,0.50]
class average in mm =
[0.125,0.250,0.375,0.50,0.75,1.00,1.25,1.50,1.75,2.00,2.50,3.00,3.50,4.00
,4.50,5.00,5.50,6.00,6.50,7.0,7.50,8.00]

vDi = 9.65-(10.3*exp(-0.6*class_average))
vDi =
[0.0942411,0.784707,1.42528,2.01957,3.08243,3.99724,4.78462,5.46233,6.045
64,6.54770,7.35176,7.94742,

8.38870,8.71560,8.95778,9.13719,9.27010,9.36857,9.44151,9.49555,9.53558,9
.56523]

Files:
1) Total_RawData_Thies_ + site + .txt
2) Total_Conc_Thies_ + site + .txt
3) Total_RainRate_Thies_ + site + .txt

File 1:
440 classes (22 diameter * 20 speed),first all speeds, then the next
diameter class.

File 2:
Concentration file
N(Di) = ni/(F.t.v(Di).deltaDi)

N(Di) = number density of drops of the diameter corresponding to size
class i per unit volume, (mm-1.m-3)
ni = number of drops measured in drop size class i during time interval t
F = size of the sensitive surface of the sensor, in m2, F=0.00456 m2
t = time interval, in s
v(Di) = fall velocity of a drop with diameter Di, in m/s
deltaDi = diameter interval of drop size class i, in mm

YYYYMMDD hhmm N(Di) i = 1...22

File 3:
YYYYMMDD hhmm Rain Rate (mm/h)