

## Final Report / Presentation, AU 2008

Geography 622.02: Microclimatological Field Methods and Data Analysis

### Topics

Aerodynamic Roughness Length ( $z_0$ )

- compare  $z_0$  derived using upper and lower profiles

$Q_H + Q_E$  (C.C., J.G.)

- Compute & plot cumulative evaporation
- Investigate condensation cases
- investigate effect of stability corrections

$Q_{Rad}$  (T.M., K.H.)

- Interpret individual components under clear and cloudy cases
- Investigate effect of frontal passage on shortwave and longwave
- Albedo
- 4 components and  $R_n$  individually.

$Q_G$  (C.W., S.C, J.P.)

- compute  $k$
- compare  $Q_g$  from heat flux plate with  $Q_g$  computed from  $kdT/dz$ ,
- compare installation A and B through time (10 minute means), including daily means
- Compute change in energy storage

$dT/dz$  (A.C.)

- investigate diurnal fluctuations on upper and lower profiles.

Eddy Covariance (T.R; R.M)

- Compare  $Q_e$  and  $Q_h$  derived from aerodynamic profile with Eddy Covariance values
- Analyzing 3D winds

U\* (J. B.)

- Compare friction velocity derived from aerodynamic profile with Eddy Covariance values

dq/dz (D.B.)

- investigate diurnal fluctuations on upper and lower profiles.

Q<sub>Residual</sub>

- Investigate QR under different air masses using pressure data to identify frontal passage
- Does the change in energy storage correlate with residual?

Stability (T.S)

- investigate effect of stability corrections

QP (T.O.)

- Compute Qp, interpret wrt E Budget

Thermodynamics (C.B)

- What effect does including humidity have on R<sub>i</sub> and Q<sub>H</sub>?

Frontal Passage (J.F., D.H)

- Effect of on all variables, state vars and derivatives, that is, E fluxes.

## Presentation Format

15 min total

### 1. Introduction (Scientific Background)

Here, briefly discuss the scientific background for the science behind your measurements. Finish this section with a clear statement of your objectives.

### 2. Data

Here, provide an overview of the data set, sensor accuracy both specified by manufacturer and what you expect the accuracy to be and what failure modes the instrument has to your knowledge.

### 3. Methods

Here, you should present any equations used.

### 4. Results

Here, discuss details of your findings.

### 5. Conclusions

Important here, what are the "take home" messages. For example... The Vaisala HMP 45 C sensor is not capable of resolving diurnal fluctuations in vertical temperature nor humidity differences in the lower PBL. We therefore conclude that purchasing the HMP 45 C is not recommended for surface energy budget studies. Another example, frontal activity significantly influenced surface energy budget quantities in the following ways.... a.... b.....c....

### **Attention!**

Throughout the presentation, avoid slang, and above all BE PROFESSIONAL. I'll provide you with both constructive and critical comments. Your score will reflect your attention to detail, professionalism, graphics, and science content.

Use simple slide design, that has no (distracting) background images.

Don't over produce your presentation. Go for lean, clean, and to the point.

Don't be surprised how quickly 15 minutes can go.