Readme\_86\_MLW.doc:

(update January 29, 2015)

0) Fair use policy: Kindly inform the appropriate Principal Investigators of how you are using site data and of any publication plans. If the Principal Investigators feel that they should be acknowledged or offered participation as authors, they will let you know and we assume that an agreement on such matters will be reached prior to publishing and/or use of the data for publication. If your work directly competes with the Principal Investigator's analysis they may ask that they have the opportunity to submit a manuscript before you submit the one that uses their data. In addition, when publishing, please acknowledge the agency that supported the research.

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2) Data from the Taihu Eddy Flux Network at Lake Taihu, East China. Details of the site and instrumentation are given by Xiao et al. 2014 and Lee et al. 2014, available at http://yncenter.sites.yale.edu/publications

3) The file naming is **CC\_SiteName\_yyyy**, where CC denotes a two-character Country Code; SiteName is the unique site identifier; yyyy is the sampling year. Each day have 48 records. Missing values and parameters not reported are denoted by -9999.

4) To avoid the problem of footprint mismatch, we only analyzed the fluxes data collected during times when the wind came from the open water (wind direction 180–270o).

5) The EC CO2 flux were restricted to data collected before spring of 2013 (DOY 457, April 1 of 2013). After that, the EC measurement was interfered too much by floating vegetation growing near the sensor.

6) Relevant references:

[1] Lee X, S Liu, W Xiao, W Wang, Z Gao, C Cao, C Hu, Z Hu, S Shen, Y Wang, X Wen, Q Xiao, J Xu, J Yang, M Zhang (2014) The Taihu Eddy Flux Network: an observational program on energy, water, and greenhouse gas fluxes of a large freshwater lake. Bulletin of American Meteorological Society 95: 1583-1594.

[2] Xiao W, S Liu, H Li, Q Xiao, W Wang, Z Hu, C Hu, Y Gao, J Shen, X Zhao, M Zhang, X Lee (2014) A flux-gradient system for simultaneous measurement of the CH4, CO2 and H2O fluxes at a lake-air interface. Environmental Science and Technology 48: 14490−14498.

[3] Wang W, W Xiao, C Cao, Z Gao, Z Hu, S Liu, S Shen, L Wang, Q Xiao, J Xu, D Yang, X Lee (2014) Temporal and spatial variations in radiation and energy balance across a large freshwater lake in China. Journal of Hydrology 511: 811-824.

7) Content and format of header records:

(:,1): Year, Years A.D., China Standard Time of UTC+08:00

(:,2): DOY, Julian day of China Standard Time

(:,3): Hour, China Standard Time of day expressed in a three /four-digit HHMM format (e.g., 2:30 AM = 230; 2:30 PM = 1430). Each half-hourly timestamp indicates the end of the measurement period.

(:,4): Year, Years A.D., UTC

(:,5): DOY, Julian day of UTC

(:,6): Hour, UTC standard time of day expressed in a three /four-digit HHMM format (e.g., 2:30 AM = 230; 2:30 PM = 1430). Each half-hourly timestamp indicates the end of the measurement period.

(:,7): FC\_EC, CO2 flux measured by the eddy covariance method, expressed in µmol m-2 s-1. Positive values denote upward fluxes (i.e., source to the atmosphere) (height: 3.5 m)

(:,8): FC\_FG, CO2 flux measured by the flux-gradient method, expressed in µmol m-2 s-1, 3.5 m. Positive values denote upward fluxes (higher intake at 3.5m and lower intake at 1.1m)

(:,9): FCH4\_FG, Measurement of CH4 flux by the flux-gradient methods, expressed in nmol m-2 s-1. Positive values denote upward fluxes (higher intake at 3.5m and lower intake at 1.1m)

(:,10): H, Sensible heat flux, expressed in W m-2. Positive values denote upward fluxes (i.e., away from the water surface) (height: 3.5 m)

(:,11): LE, Latent heat flux, expressed in W m-2. Positive values denote upward fluxes (height: 3.5 m) (i.e., away from the water surface) (height: 3.5 m)

(:,12): Ta, Air temperature, expressed in degrees Celsius (height: 3.5 m)

(:,13): Ustar, Friction velocity, expressed in m s-1 (height: 3.5 m)

(:,14): Tau, Momentum flux, expressed in m2 s-2 (height: 3.5 m)

(:,15): WS, Wind speed, expressed in m s-1 (height: 3.5 m)

(:,16): WD, Wind direction, expressed in degrees clockwise from the North (height: 3.5 m)

(:,17): RH, Relative humidity of air expressed as a percentage (height: 3.5 m)

(:,18): Press, Barometric pressure, expressed in kPa (height: 3.5 m)

(:,19): SW, Incoming shortwave radiation, expressed in W m-2 (height:3.7 m)

(:,20): Rnet, Net radiation, expressed in W m-2. Positive values denote downwards (height: 3.7 m)

(:,21): Precip, Total rainfall within the measurement period, expressed in mm (height:3.5m)

(:,22): TW0, Water temperature measured at depth 0 m expressed in degrees Celsius, calculated using long-wave radiation data

(:,23): CO2, Atmospheric CO2 concentration at 3.5 m measured by the flux gradient system, expressed in µmol/mol

(:,24): CH4, Atmospheric CH4 concentration at 3.5 m measured by the flux gradient system, expressed in nmol/mol

(:,25): H2O, Water vapor concentration at 3.5 m measured by the flux gradient system, expressed in mmol/mol

(:,26): TW20, Water temperature measured at depth 20 cm, expressed in degrees Celsius