Micro-pulse Lidar File Introduction

SACOL Site Data Information:

Reference Site: SACOL

SACOL (Semi-Arid Climate and Environment Observatory of Lanzhou University) is supported by Lanzhou University and operated by College of Atmospheric Sciences.

It is an international research observatory and led by Dr. Jianping Huang (Chief Scientist). If you have any question about the data, please contact with Dr. Huang at hjp@lzu.edu.cn

Location: Latitude: 35.946N   longitude: 104.137E

Elevation: 1965.8 m   Land Cover: moderation

Surface Type: loess tableland, ridge, hillock and gully

WEB: http://climate/index.asp

The data can be open and read by TXT, IDL,fortran and some other tools.

MPL file is a Binary format file named YYMMDDHH.mmW, e.g. if data was collected at 12:00 May 2, 2007 then file was named 07050212:00W. MPL file contains at mostly an hour collections. Note that file contains 44 byte header include collection time, energy, temperatures, Background counts and so on. MPL file format introduction see table 1.One can write a program read mpl file and correct the data (units is 1/µs) before using.

   SACOL MPL have worked healthily since March 26, 2007.

Number of available days as follow,

March	6
April	28
May	30

Comment：The files will be used during correcting the data as follow,

 Darkcount file: 07040402.49W

 Afterpusle file: 07041003.00W

Table 1 :

Mpl file format introduction

Record Entry	Format	Usage
Unit Number	Byte	50 for MPL
Year	Byte	Record Collection Time. Year from 1900
Month	Byte	�
Day	Byte	�
Hours	Byte	�
Minutes	Byte	�
Seconds	Byte	�
Hundredth of Seconds	Byte	�
Shots Sum	Int32	Number of laser shots collected
Trigger Frequency	Uint16	Laser fire rate (usually 2500)
Energy Monitor	Uint16	Mean of the Energy Monitor readings
Temp#0	Uint16	Mean of the A/D#0 readings
Temp#1	Uint16	Mean of the A/D#1 readings
Temp#2	Uint16	Mean of the A/D#2 readings
Temp#3	Uint16	Mean of the A/D#3 readings
Temp#4	Uint16	Mean of the A/D#4 readings
BackgroundStd Dev	Uint32	Background Standard Deviation * 1E8. Channel#1
Number Channels	Byte	MCS Channels collected. Either 1 or 2
spare	Byte	Unused
Background	Uint32	Background Average * 1E8. Channel#1
Bin Time	Uint32	Bin width in nanoseconds (100,200, or 500)
Max Altitude	Uint16	Maximum altitude, Always = 60km
Dead Time corrected	Uint16	Always 0. Not corrected.
Channel#1 Data	Uint32 array	4001,2001, or 801 bins of data. Data is converted from raw values to counts/microsecond * 1E8
Channel#2 Data	Uint32 array	Only present if 2 channels collected.