ATOMIC ROADMAP for P3 Level2 Files

C. Fairall 6 May 2020

NOAA deployed the P-3 aircraft during the ATOMIC 2020 field program (Jan-Feb).

Table 1. Summary of P3 flights for ATOMIC. The lat/lon for the center of the dropsonde is nominal and applies to one of the circles. Cfract refers to the average cloud fraction as determined form the downlooking IR sensor. It is approximate and misses a lot of small clouds.



The P-3 carried two PSL systems (WSRA and Wband radar), a fast isotope system, and dropped dropsondes and AXBT’s. Several P3 observing systems were archived (see below). In this document we will briefly describe the summary files from some of these systems.

Data from all P-3 systems are archived at ftp://ftp1.esrl.noaa.gov/psd3/cruises/ATOMIC/P3/

Individual flights are given in directories with the names 2020MMDDI1, with flights on

01 17 20200117I1 17

01 19 20200119I1 19

01 23 20200123I1 23

01 24 20200124I1 24

01 31 20200131I1 31

02 03 20200203I1 34

02 04 20200204I1 35

02 05 20200205I1 36

02 09 20200209I1 40

02 10 20200210I1 41

02 11 20200211I1 42

Within each flight directory are subdirectories:

AVAPS Dropsonde raw files

DMT Cloud/precipitation microphysics from DMT probes.

FLT LVL Data from P3 flight level measurements

SFMR Stepped frequency microwave radiometer

WSRA Wide Swath Radar Altimeter Level 1&2

AXBT Raw AXBT files

Wband, Level4 WSRA, isotope files are archived separately.

This document describes the subdirectory structure for PSL-processed Level2 data. The files are contained in ftp://ftp1.esrl.noaa.gov/psd3/cruises/ATOMIC\_2020/P3/summary/. Contained therein are matlab .mat files with data on

Axbt

Cloud

Flightlevel

Matlab

Sonde

Write\_ups

WSRA

**Axbt** contains files for each of 6 flight where ASBT’s were dropped, plus an ‘all’ files that has all files appended together.

**Cloud** contains *.mat* files for each flight plus an ‘all’ file. These files contain 23 variables including aircraft parameters plus cloud information deduced from the radar and IR thermometer. There is also a comma-delimited txt file of the ‘all’ files.

**Flightlevel** is a set summary aircraft navigation and meteorological data abstracted from the AC.nc files. Individual flight files and an ‘all’ file are provided.

**Matlab** contains a selection of matlab scripts used to produce the various files.

**Sonde** contains.mat files from the dropsondes for each flight plus an ‘all’ file.

**Write ups** has readme files describing the formats of the data plus some short write-ups documenting certain aspects of the radar data.

**WSRA** contains Level4 netcdf data from the ProSensing site. Data include dominant plus secondary wave information, mean-square slope, rainrate, and wave spectra.