

Southern Ocean Clouds, Radiation, Aerosol Transport Experimental Study (SOCRATES) High Resolution New Zealand BUFR Format Radiosonde Data Set

1.0 Contacts:

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Original Data Source:

Global Telecommunication System (GTS)

2.0 Dataset Overview

The Meteorological Service of New Zealand routinely releases radiosondes at stations throughout New Zealand. This data set includes data from Invercargill and Paraparaumu. The stations release soundings at 10 and 22 UTC. This data set includes the real time high vertical resolution (2 second) these two sites (Figure 1) during the SOCRATES field phase (1 January to 28 February 2018).



Figure 1. Location of New Zealand radiosonde sites included in this data set.

3.0 Project Overview

The **Southern Ocean Clouds, Radiation, Aerosol Transport Experimental Study (SOCRATES)** project was conducted over the Southern Ocean to improve our understanding of clouds, aerosols, air-sea exchanges, and their interactions over the Southern Ocean. Further information on SOCRATES is available at the SOCRATES web site at NCAR/EOL: https://www.eol.ucar.edu/field_projects/socrates and information on the SOCRATES deployments is available at the SOCRATES Field Catalog: <http://catalog.eol.ucar.edu/socrates/tools/missions>.

4.0 Data Format and Remarks

These data are in the Binary Universal Form for the Representation of meteorological data (**BUFR**) format. Software such as the ECMWF ecCodes (<https://software.ecmwf.int/wiki/display/ECC/ecCodes+Home>) or NCEP BUFRLIB (<http://www.nco.ncep.noaa.gov/sib/decoders/BUFRLIB/>) can manipulate these data.

The files contain data at two-second intervals.

Both stations typically released radiosondes at 10 and 22 UTC and utilized Vaisala RS41 radiosondes with pressure derived from GPS height and the DigiCORA MW41ground system.

The file naming convention is:

YYYYMMDDHHmm.site_cc_sounding.bufr

Where YYYYMMDDHHmm is the UTC date and time; site is the station name; cc is the country code.

4.1 Station List

| Site ID | WMO ID | Site Name | Country | Latitude | Longitude | Elev (m) |
|---------|--------|--------------|---------|----------|-----------|----------|
| NZNV | 93844 | Invercargill | NZ | -46.418 | 168.33 | 4 |
| NZPP | 93417 | Paraparaumu | NZ | -40.9047 | 174.984 | 7.4 |

5.0 Data Quality Control Procedures

Information on which corrections were applied by the source is included in the data files.

These data are as they were retrieved from the real time Global Telecommunications System. No additional quality control has been performed by NCAR/EOL.