README: Subset of ICOADS Release 3 Observations

7 June 2021

The data provided are extracted from archived files in International Maritime Meteorological Archive Version 1 (IMMA1) format and presented in Comma Separated Value (CSV) ASCII text format files. The CSV structure can be imported, displayed, and manipulated in spreadsheet software (e.g. Microsoft XCEL) or read with codes in other programming languages. If you wish to convert from .CSV format to fixed length ASCII records or read .CSV into a FOTRAN program see the included file named rdmma1_csv.f

The parameter naming convention used in the CSV formatted output are the same as described in the IMMA1 documentation, e.g. *YR, MO, DY, HR, LAT,* and *LON* represent year, month, day, hour in UTC and latitude north and longitude east. Some data values in the IMMA1 format are in scaled representation, e.g *SST* = 24.1°C is represented as 241. All data values in the CSV formatted output have been converted to be full true values with correct physical units. As another example, a *LON* in IMMA1 that is scaled to be 16045 is un-scaled to *LON* = 160.45°E in the CSV formatted output.

The detailed descriptions of all parameters and codes are available in these long and short version documents.

- R3.0-imma1.pdf - Complete IMMA1 format description
- R3.0-imma1_short.pdf - Brief IMMA1 format description

Your data citation for American Geophysical Union (AGU) publications is:

"National Centers for Environmental Information/NESDIS/NOAA/U.S. Department of Commerce, Research Data Archive/Computational and Information Systems Laboratory/National Center for Atmospheric Research/University Corporation for Atmospheric Research, Earth System Research Laboratory/NOAA/U.S. Department of Commerce, Cooperative Institute for Research in Environmental Sciences/University of Colorado, National Oceanography Centre/Natural Environment Research Council/United Kingdom, Met Office/Ministry of Defence/United Kingdom, Deutscher Wetterdienst (German Meteorological Service)/Germany, Department of Atmospheric Science/University of Washington, and Center for Ocean-Atmospheric Prediction Studies/Florida State University (2016), International Comprehensive Ocean-Atmosphere Data Set (ICOADS) Release 3, Individual Observations, http://dx.doi.org/10.5065/D6ZS2TR3, Research Data Archive at the National Center for Atmospheric Research, Computational and Information Systems Laboratory, Boulder, Colo. (Updated monthly.) Accessed 2021-06-07."

Citation styles for other publications (AMS, ESIP, GDJ, DataCite) and input for citation management tools are at: ICOADS Release 3 Home Page

---

CSV File Format Description

- The first data row is an ordered list of parameter/variable names. One name for each column of data provided.
    - E.g. *YR,MO,DY,HR,LAT,LON,…,SST,…*
- Date/time and geographical location are provided for every record and are positioned in the first columns.
    - E.g. 2005,09,25,14.25,-15.67,250.89,…,23.4,…
- Missing parameters/variables are presented as two successive commas, without space

between them.

Your data request details for user name, temporal range, spatial domain, and number of records:

- User Name: Shaun Bell [shaun.bell@noaa.gov]
- Temporal Range: 1662-10-15 2014-12-31
- Latitude Limits (+°N, -°S): -90, -60
- Longitude Limits (+°E only): 0, 360
- Number of Records: 2326145

Your data request details for the required selections

- Parameters/Variables from IMMA1 *Core*, Table C0, page 32 of R3.0-imma1_short.pdf
  - *YR,MO,DY,HR,LAT(°N),LON(°E),SLP(hPa),AT(°C), SST(°C)*
- P/V *Icoads*, Table C1, page 34
  - *DCK,SID,PT*
- P/V *Uida*, Table C98, page 45, this unique record tracking metadata is default on all records
  - *UID,RN1,RN2,RN3,RSA,IRF*

Your data request details for data flag and QC application

Details at: R3.0-stat_trim.pdf
Option settings used:

opdn	oppt	opse	opcq	optf	op11
0	1	0	0	2	1

opdn: day/night/all data selection
    0=all, 1=night, 2=day
oppt: platform type selection
    0=ship (standard), 1=all (enhanced)
opse: source exclusion selection
    0=apply, 1=ignore
opcq: composite qc flag selection
    0=apply, 1=ignore
optf: trimming flag selection
    0=trimming: reject outside 2.8 sigma
    1=trimming: standard (reject outside 3.5 sigma)
    2=trimming: enhanced (reject outside 4.5 sigma)
    3=trimming: untrimmed (trimming flags not checked and op11 has no effect)
op11: Trimming flag 11 selection:
    Reject or use OSD drifting buoy data (*SST/SLP* only) from areas where trimming was NOT set because of missing climatologies. This allows a special pass through for OSD data.

NOTE: The computation of standard and enhanced processing statistical products by the ICOADS project uses the following settings.

Option settings:	opdn	oppt	opse	opcq	optf	op11
standard MSG:	0	0	0	0	1	0
enhanced MSG:	0	1	0	0	2	1