

Reading NEODC Ames format files with IDL

Robin Wilson, University of Southampton, 2009

Introduction

The NERC Earth Observation Data Centre store a large amount of important remote sensing data, including the data from the NCAVEO Field Experiment 2006. A good proportion of this data is stored in a slightly modified version of the NASA Ames file format. I have called this altered version the *NEODC Ames file format*.

This format is very similar to the standard NASA Ames FFI=1001 format (see Gaines and Hipkind, 2006) but the independent variable field is always a date. This date is expressed in the ISO 8601 (2004) *Extended Format*. The original NASA Ames specification did not allow for date/time data to be stored easily, hence the modification.

A routine called `READ_NEODC_AMES_FILE` has been developed to allow NEODC Ames files to be easily read into IDL. The rest of this document will explain how to use this routine.

Usage

To use this routine, call it in the following manner:

```
READ_NEODC_AMES_FILE, filename, header=header, indep=indep,  
primary=primary
```

The routine will run silently, and will only output messages if an error occurs. Once the routine has finished running, the `header`, `indep` and `primary` variables will contain structures of data from the file. In the tables below all field names correspond to those in Gaines and Hipkind (2006), and *NR* stands for the number of records.

The header structure contains the following fields:

Field	Description	Type
NLHEAD	Number of lines in the header	Integer
FFI	File Format Index	Integer
ONAME	Originators of the data	String
ORG	Organisation or affiliation of the originator	String
SNAME	Source of the measurements	String
MNAME	Mission name	String
IVOL	Volume number of dataset	Integer
NVOL	Total number of volumes in the dataset	Integer
DATE	Date at which data begins (UTC)	Float (Julian datetime)
RDATE	Date of revision into NEODC Ames file	Float (Julian datetime)
SCOM	Special comments	String (multiline)
NCOM	Normal comments	String (multiline)

The indep structure contains details about the independent variables as follows:

Field	Description	Type
DX	Interval between successive values of the independent variable	Float

Name	Name of the independent variable (always date/time in NEODC Ames format)	String
Values	The values of the independent variable, stored as Julian datetimes.	Double[NR]

The primary structure contains details of the primary variables, as follows:

Field	Description	Type
NV	Number of variables	Integer
VSCAL	Scale factor for each variable. Used to convert the variable to the right units (normally just set to 1.0)	Float[NV]
VMISS	Missing value flags for each variable	Float[NV]
VNAME	Name for each variable	String[NV]
VALUES	Values of the primary variables	Float[NR, NV]

References

GAINES, S. E. & HIPSKIND, R. S. (2006) ASCII File Format Specification for Data Exchange: Version 2.0. NASA.