Gravimetric Catalog

Gravimetric Catalog - General Description

The catalog is a variable in the Matlab format file and it is kept in a file MAT. The structure is an array with named fields that can contain data of various types and sizes. In the file there is only one variable, the file name and variable name are optional. The format of the gravimetric catalog is made in the same manner as a catalog of seismic events.

The variable describing the catalog is a vector of structures, consisting of fields:

- **field** name of field in the catalog (text value);
- type type of field in the catalog and way of showing the field (numeric value);
- val column array of values. For the text the column is an array type cell with text fields. For the remaining value the column is a numeric column
- unit description of unit for individual data (text value).
- description short description of the parameter (text value).
- fieldType semantic meaning of the field. When some field values are similar/related then fieldType name is entered and for another case [] is entered.

The fundamental is a full catalog i.e. the variable contains the definitions of all specified fields. When some field values are missing then for the numeric data NaN (not specified) is entered and for the text null [] is entered. In the fields "ID", "Time", "Dg", "V" and "P" values in all rows must be present.

Field	Туре	Unit	Description	FieldTy pe	Comments	Data format
RID	3		Registration ID		required field. ID must be linked to name of plezometer record	text
EID	3		Event ID		required field. ID should be linked to catalog EID	text
Time	5		Event origin time		required field, Matlab serial numerical time	double
SID	3		Station ID		required field	text
S_name	3		Station name		required field	text
S_Lat	24,25	deg	Station latitude		required field	double
S_Long	24,25,34, 35	deg	Station longitude		required field	double
S_Elevati on	34	m	Station elevation		required field	double
R_Time	5	days	Registration occurrence time		required field	double
Dg	23	uG al	Gravity field acceleration change		required field	double
V	23	um /s	Velocity of ground motion change due to gravity (vertical component)		required field	double
P	23	um	Position - displacement of ground due to gravity (vertical component)		required field	double

Table 1. The general parameters in catalog MAT format.

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The Numbers of Data type:

- 1 the real data without limits,
- 2 the integer data,
- 3 text value,
- 4 the real number rounded to 0.1 (shown as 11),
- 5 time in Matlab format serial time the time display format; seconds with accuracy 1/10,
- 6 the real data display in an engineering manner with one decimal place, e.g.: 3.5E6, (obsolete, recommended 2cd)
- 7 the real data display in an engineering manner with two decimal place, (obsolete, recommended 2cd)
- bc (b and c are code digits) the real data display in fix-point manner with at minimum b places before decimal and c decimal place
- e.g. For number 3.149.
- 10: "3"
- 11: "3.1"
- 12: "3.15"
- 20: ..03"
- 23: "03.149"
- 1bc- the same manner as bc, but with place for a sign (space for sign "+", sign for sign "-")
- 2cd- (c and d are code digits), the real data is displayed in an engineering manner, with place for a sign (space for sign "+", sign '-' for sign "-"), with c decimal place and exponent expressed by d places. The sign in exponent is always displayed.
- e.g. For number 0.001:
- 211: "1.0E-3" 221: "1.00E-3"
- 212: "1.0E-03"
- 222: "1.00E-03"
- e.g. For number 1000:
- 211: "1.0E+3"
- 221: "1.00E+3"
- 212: "1.0E+03"
- 222: "1.00E+03"

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