GHOST Standardised Data Definitions

Table of Contents

[PREFACE 1](#_Toc535249353)

[Definition Syntax 1](#_Toc535249354)

[VARIABLE DEFINITIONS 1](#_Toc535249355)

[TIME 1](#_Toc535249356)

[MEASUREMENT VALUES 2](#_Toc535249357)

[PARAMETERS INFORMING QUALITY OF MEASUREMENT 2](#_Toc535249358)

# PREFACE

“Data” refers to time and measured parameter variables, as well as variables which inform of the quality of each separate measurement.

# Definition Syntax

**variable\_name:**

standard\_name:

long\_name:

units:

string\_format:

description:

# VARIABLE DEFINITIONS

## TIME

**time**

standard\_name: time

long\_name: time

units: minutes since 0001-01-01 00:00:00

data\_type: np.uint32

string\_format: np.NaN

description: Integer time in minutes since 0001-01-01 00:00 UTC. Time given refers to the start of the time window the measurement is representative of (temporal resolution).

## MEASUREMENT VALUES

**parameter\_details['bsc\_parameter\_name']**

standard\_name: parameter\_details['long\_parameter\_name']

long\_name: parameter\_details['long\_parameter\_name']

units: parameter\_details['standard\_units']

data\_type: np.float32

string\_format: np.NaN

description: Measured value of surface %s for the stated temporal resolution.'%(parameter\_details['long\_parameter\_name'])

## PARAMETERS INFORMING QUALITY OF MEASUREMENT

**temporal\_resolution**

standard\_name: temporal resolution

long\_name: temporal measurement resolution

units: unitless

data\_type: np.object

string\_format: upper\_short

description: Temporal resolution that a specific measurement is representative of. Typically: H (hour), D (day), W, (week), M (month). If resolution is not one of these, reported as an integer string (in minutes). Highest time resolution possible is 1 minute.

**reported\_lower\_limit\_of\_detection\_per\_measurement**

standard\_name: reported lower limit of detection per measurement

long\_name: reported lower limit of detection per measurement

units: parameter\_details['standard\_units']

data\_type: np.float32

string\_format: np.NaN,

description: Reported lower limit of detection of measurement methodology, for a specific measurement, in %s.'%(parameter\_details['standard\_units'])

**reported\_upper\_limit\_of\_detection\_per\_measurement**

standard\_name: reported upper limit of detection per measurement

long\_name: reported upper limit of detection per measurement

units: parameter\_details['standard\_units']

data\_type: np.float32

string\_format: np.NaN

n\_decimals: np.NaN

description: Reported upper limit of detection of measurement methodology, for a specific measurement, in %s.'%(parameter\_details['standard\_units'])

**reported\_uncertainty\_per\_measurement**

standard\_name: reported measurement uncertainty per measurement

long\_name: reported measurement uncertainty per measurement

units: parameter\_details['standard\_units']

data\_type: np.float32

string\_format:np.NaN,

description: Reported measurement uncertainty (±) of methodology, for a specific measurement. In principal this refers to the inherent uncertainty on every measurement as a function of the quadratic addition of the accuracy and precision metrics (at the same confidence interval), but is often reported incosistently e.g. being solely determined from random errors (i.e. just the measuremental precision). This is given in absolute terms in %s.'%(parameter\_details['standard\_units'])

**derived\_uncertainty\_per\_measurement**

standard\_name: derived measurement uncertainty per measurement

long\_name: derived measurement uncertainty per measurement

units: parameter\_details['standard\_units']

data\_type: np.float32

string\_format: np.NaN

description: Derived measurement uncertainty (±) of methodology, for a specific measurement. This is calculated through the quadratic addition of reported (or if not available, documented) accuracy and precision metrics. This is given in absolute terms in %s.'%(parameter\_details['standard\_units'])

**flag**

standard\_name: flags

long\_name: data reporter provided standardised flags

units: unitless

data\_type: np.object

string\_format: upper\_short

n\_decimals: np.NaN

description: Data flag, indicating the data quality of a specific measurement, provided by the data reporter.

**qa**

standard\_name: qa

long\_name: qa standardised data flags

units: unitless

data\_type: np.object

string\_format: upper\_short

description: Concatenated flag string, indicating scientific issues for each observation after being passed through multiple scientific quality control/assurance tests.