National Snow and Ice Data Center

Surface Velocities of Taylor Glacier, Antarctica

Summary

This data set contains surface velocities of Taylor Glacier, Antarctica, for the year 2003. Measurement period was approximately 12 months. There are approximately 250 locations in this data set. The data set includes a location name, the easting and northing coordinates (UTM), the elevation, the velocity magnitude, the east component of velocity, the north component of velocity, and the vertical component of velocity. Data are available in comma-delimited ASCII text format and are available via FTP.

Citing These Data

We kindly request that you cite the use of this data set in a publication using the following citation. For more information, see our Use and Copyright Web page.

Cuffey, Kurt, Andrew Bliss, Jeffrey Kavanaugh, Sarah Aciego. 2007. Surface velocities of Taylor Glacier, Antarctica. Boulder, Colorado USA: National Snow and Ice Data Center. http://dx.doi.org/10.7265/N5RV0KM7.

Overview Table

Category	Description
Data format	comma-delimited ASCII text
Spatial coverage and resolution	Southernmost Latitude: 78.00° S Northernmost Latitude: 77.50° S Westernmost Longitude: 160.00° E Easternmost Longitude: 163.00° E
Temporal coverage and resolution	2002-01-30 to 2003-01-30
File naming convention	`taylor_poles.dat`
File size	Approximately 18 KB.
Parameter(s)	Ice Velocity
Procedures for obtaining data	

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1. Contacts and Acknowledgments

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2. Detailed Data Description

Format

Data files are in comma-delimited ASCII text format viewable with spreadsheet software.

File Naming Convention

Files are named according to the following convention.

File name	File Size	Description
taylor_poles.dat	18 KB	ASCII text File

Spatial Coverage

Southernmost Latitude: 78.00° S
Northernmost Latitude: 77.50° S
Westernmost Longitude: 160.00° E
Easternmost Longitude: 163.00° E

Parameter or Variable

Parameter Description

The measured parameters are ice velocity and ice sheet elevation.

Parameter Range

Characteristic velocities in the accumulation and ablation zones are ~1 and 10 ma^{-1}, respectively.

Sample Data Record

The data below are the first 10 data samples showing a location name, the northing and easting coordinates (UTM), the elevation, the velocity magnitude, the east component of velocity, the north component of velocity, and the vertical component of velocity. Please note that these data are in UTM Zone 57.

Pole	Northing	Easting	Elev.	Vel.	Vel., E	Vel., N	Vel., Z
BASE1	1365890.965	565545.163	562.430	0.000	0.000	0.000	0.000
BASE2	1358975.310	556893.030	727.470	0.000	0.000	0.000	0.000
BASE3	1378334.857	547114.660	1342.938	0.000	0.000	0.000	0.000
T01A1	1369157.184	574805.406	247.382	6.809	2.696	6.252	-0.108
T01A3	1369063.267	574322.755	270.435	7.424	2.669	6.927	-0.111
T01A4	1369431.817	574216.654	262.645	6.992	2.724	6.436	-0.221
T02A1	1368741.847	573327.693	308.413	7.381	1.129	7.295	-0.014
T02A2	1369199.880	573244.303	305.383	6.995	0.784	6.943	-0.321
T02A3	1368652.373	572847.240	329.268	7.121	0.303	7.115	-0.061
T02A4	1369129.919	572762.343	341.080	7.061	-0.043	7.059	-0.148

Volume

The data set is approximately 18 KB.

Related Data Collections

- Stable isotopes of ice on the surface of Taylor Glacier, Antarctica
- Ablation Rates of Taylor Glacier, Antarctica

4. Data Acquisition and Processing

Sensor or Instrument Description

Global Positioning System

Data Acquisition Methods

Technique used was differential GPS surveys of aluminum poles in the ice, relative to base stations on rock. Data were reduced using Trimble Geomatics software.

5. References and Related Publications

Aciego, S., K.M. Cuffey, J.L. Kavanaugh, D.L. Morse, and J.P. Severinghaus, 2007. Pleistocene ice and paleo-strain rates at Taylor Glacier, Antarctica. Quaternary Research 68, 303-313.

6. Document Information

Acronyms and Abbreviations

The following acronyms and abbreviations are used in this document.

FTP	File Transfer Protocol
NSIDC	National Snow and Ice Data Center
URL	Uniform Resource Locator

Document Creation Date

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