

# References

## to Data Formats, used within the CHAMP Project

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### 1) RINEX format

For format definition and details see: **W. Gurtner: RINEX - The Receiver Independent Exchange Format Version 2.10**. This document is available via Internet at:

<ftp://cddisa.gsfc.nasa.gov/pub/formats/rinex210.format>

The CHAMP GPS-SST data (i.e. CH-OG-1-SST) are presently given in the Rinex 2.10 format plus some additional observables (Phase measurement at L1, Signal-to-noise ration of the CA channel) which couldn't be expressed in the present Rinex format definition in the past. This extensions are described at:

[http://op.gfz-potsdam.de/champ/docs\\_CHAMP/CH-RINEX-EXT.html](http://op.gfz-potsdam.de/champ/docs_CHAMP/CH-RINEX-EXT.html)

Meanwhile some modifications for the Rinex format definition are proposed to accommodate Low Earth Orbiter Data (e.g. CHAMP) and to adopt the additional observables mentioned above. This is described in: **W. Gurtner: RINEX Version 2.20 - Modifications to Accommodate Low Earth Orbiter Data**, available at:

<ftp://cddisa.gsfc.nasa.gov/pub/formats/rinex220.format>

GFZ Potsdam will switch to Rinex 2.20 instead of Rinex 2.10 for the GPS SST data soon. This will be announced in a newsletter.

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### 2) CHAMP Orbit Format

The CHAMP Orbit Data Products will be distributed using the CHAMP Orbit Format which is described at:

[http://op.gfz-potsdam.de/champ/docs\\_CHAMP/CH-GFZ-FD-002.pdf](http://op.gfz-potsdam.de/champ/docs_CHAMP/CH-GFZ-FD-002.pdf)

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### 3) SP3 format

For format definition and details see: **The NGS GPS Orbital Formats**. This document and further information are available via Internet at:

<ftp://cddisa.gsfc.nasa.gov/pub/formats/sp3.format>

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#### 4) **SINEX format**

For the format definition and details see: **SINEX - Solution (Software/technique) INdependent EXchange Format Version 1.00** (June 30, 1996). This document is available via Internet at:

<http://www.dgfi.badw-muenchen.de/gps/sinex.html>

or:

<ftp://cddisa.gsfc.nasa.gov/pub/formats/sinex1.format>

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#### 5) **CDF format**

The **Common Data Format** is a binary data representation, developed for geophysical measurement data. The creation and handling of this data type is based on special CDF-software tools. For details see:

<http://nssdc.gsfc.nasa.gov/cdf/manual/cdf25ug.html>

The special application to the CHAMP magnetic field products are described at the following links:

For Scalar Magnetometer Data:

[http://op.gfz-potsdam.de/champ/docs\\_CHAMP/CH-OVM-DATA-FORMAT.html](http://op.gfz-potsdam.de/champ/docs_CHAMP/CH-OVM-DATA-FORMAT.html)

For Vector Magnetometer Data:

[http://op.gfz-potsdam.de/champ/docs\\_CHAMP/CH-FGM-DATA-FORMAT.html](http://op.gfz-potsdam.de/champ/docs_CHAMP/CH-FGM-DATA-FORMAT.html)

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#### 6) **CHAMP Data Format**

This data format is used for several CHAMP measurements data, especially for the accelerometer and attitude data and for the thruster firing events:

[http://op.gfz-potsdam.de/champ/docs\\_CHAMP/CH-GFZ-FD-001.pdf](http://op.gfz-potsdam.de/champ/docs_CHAMP/CH-GFZ-FD-001.pdf)

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#### 7) **CHAMP Gravity Field Solution Data Formats**

The CHAMP Gravity Field Solution data are expressed using the following data formats:

- SHM-Format (Earth Gravity Spherical Harmonic Model Format)
- CORREGM-format (Correlation Matrix Format, Earth Gravity Field Model)
- OTI-Format (Ocean/Atmosphere Tide Format)
- CORROTI-Format (Correlation Matrix Format, Ocean Tides)
- Orbit and Gravity Field Low Level Data Formats

A description of this data format is available at:

[http://op.gfz-potsdam.de/champ/docs\\_CHAMP/CH-GFZ-FD-003.pdf](http://op.gfz-potsdam.de/champ/docs_CHAMP/CH-GFZ-FD-003.pdf)

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