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Title : **GOCE L1b Data Quality Control Report
October 2011**

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1. INTRODUCTION

1.1 Purpose and Scope

This document contains the Quality report for GOCE L1b data for October 2011.

The latest version of this document is available on the GOCE Data Quality portal at:

<http://earth.esa.int/GOCE/> → “Level 1b QC” → “Monthly”

The GOCE Data Quality portal is the principal source for any quality-related information on GOCE products.

<http://earth.esa.int/GOCE/> → “Level 1b QC”.

1.2 Glossary

The following acronyms and abbreviations have been used in this report.

ABBREVIATION	MEANING
EGG	Electrostatic Gravity Gradiometer
DFACS	Drag Free and Attitude control system
SST-I	Satellite-to-satellite tracking instrument
CTR	Control Voltages
STR	Star Tracker
Trace SD	Trace Spectral Density
ICM	Inverse Calibration Matrix
GAR	Gradiometer Angular Rates
FPM	Fine Pointing Mode

2. OCTOBER 2011 OVERVIEW

05-Oct-11	Anomalous oscillation found in the Uyy and Uzz gradients components with impacts on trace at UTC 16:32:40
07-Oct-11	Anomalous oscillation found in the Uxx, Uyy and Uzz gradients components with impacts on trace at UTC 02:02:07
08-Oct-11	Beam Out event at UTC 21:46:03
11-Oct-11	Beam Out event at UTC 09:58:40
14-Oct-11	Beam Out events at UTC 05:53:08 and 19:52:23
23-Oct-11	Beam Out event at UTC 01:20:02
25-Oct to 26-Oct-11	EGG Instrument Calibration
26-Oct-11	Beam Out event at UTC 22:33:21

3. OCTOBER 2011 DATA QUALITY ANALYSIS

3.1 Gradients outliers on 05th and 7th of October

The Gravity gradients trace spectral density is not nominal due to two anomalous events occurred in the gradients datasets on 05/10 and 07/10. The first oscillation affects the Uyy and Uzz gradients components while the second oscillation affects the components Uxx, Uyy and Uzz.

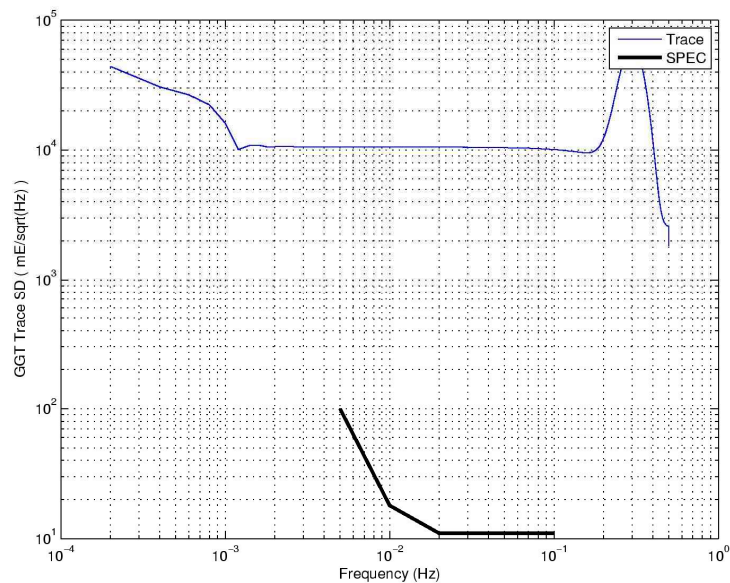


Figure 1 Trace PSD

Below the two oscillations on 05/10 16:32:40 and on 07/10 02:02:07 are reported for the Uzz component:

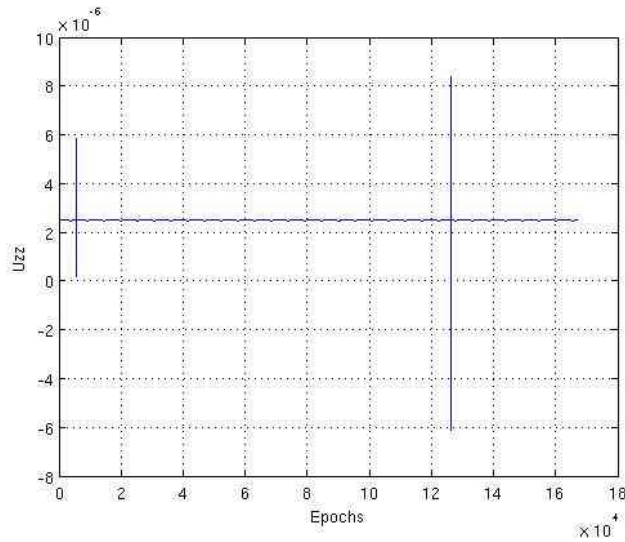


Figure 2 The two anomalous oscillation in the Uzz gradients

The trace PSD not considering the anomalous events is reported below and presents a not nominal behavior in the lower part of the MBW:

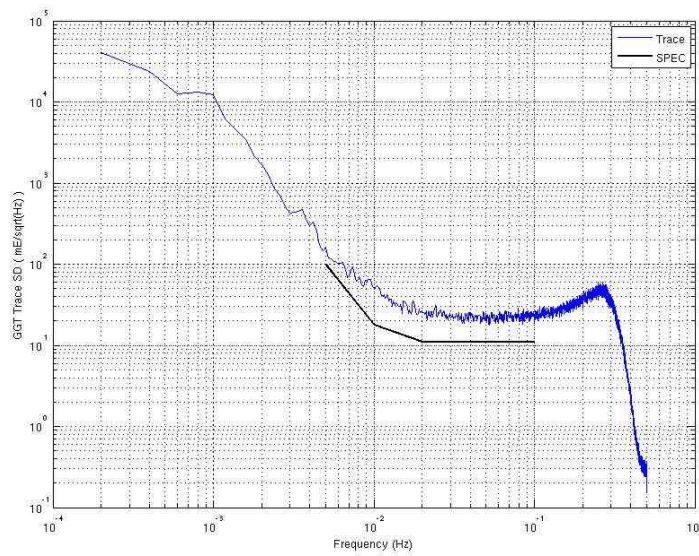


Figure 3 Trace PSD not considering the anomalous events

The CM PSDs are not nominal at high frequencies during the reference period due to the anomalies on 05/10 and 07/10:

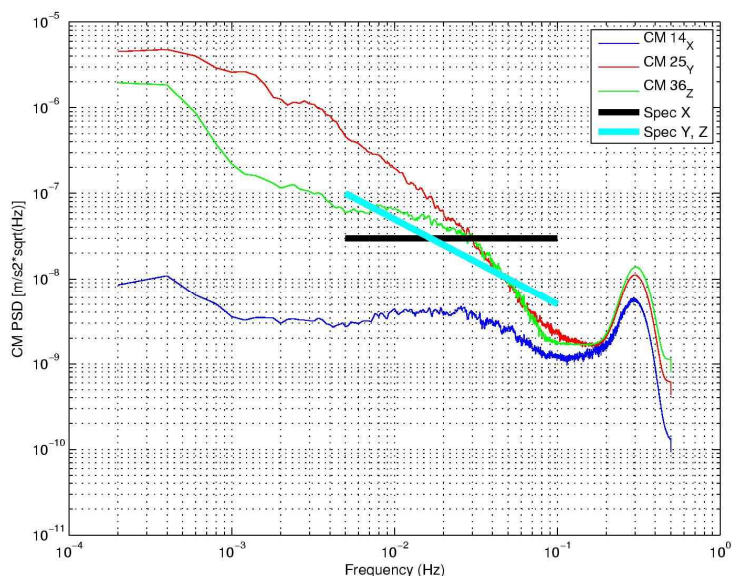


Figure 4 CM PSDs

3.2 Instrument calibration

Special Spacecraft Operations for Instrument Calibration were performed on 25th October 2011, from

- 20111025T060202
- to
- 20111026T055741

EGG_NOM_1b data are unavailable during this period, i.e. between products:

- GO_CONS_EGG_NOM_1b_20111025T043219_20111025T060202
- and
- GO_CONS_EGG_NOM_1b_20111026T055741_20111026T072725

3.3 Beam Out event

The following Beam Out events occurred during October 2011 reference frame:

EVENT NUMBER	UTC TIME
1	08/10/2011 21:46:03
2	11/10/2011 09:58:40
3	14/10/2011 05:53:08
4	14/10/2011 19:52:23
6	23/10/2011 01:20:02
7	26/10/2011 22:33:21

Table 1 Beam out events

Below, the effects of the Beam Out in the common mode acceleration, component 14_x, for the 23rd October event, is displayed (the effect is the same for all the events).

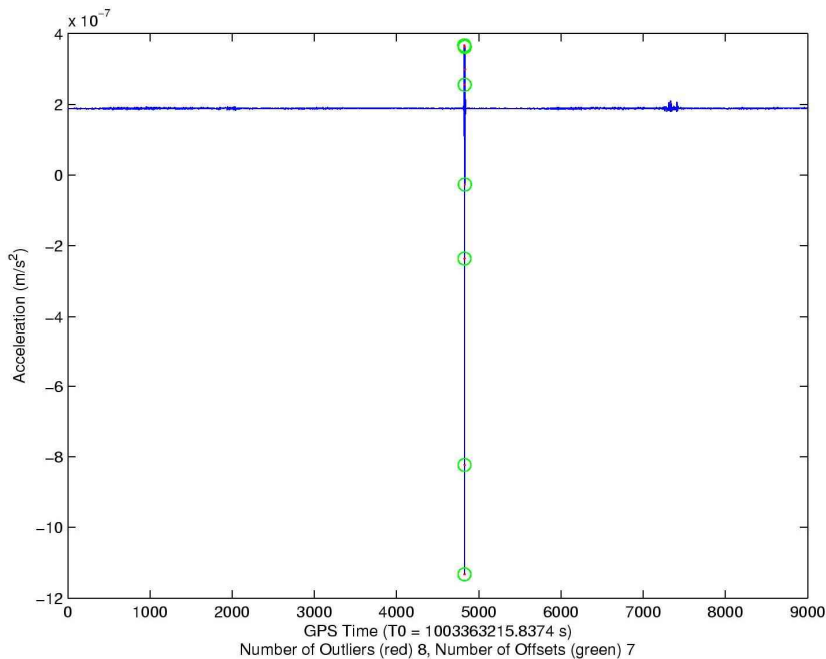


Figure 5 Beam Out event on 23rd of October

The Beam Out event enters in the gradients time series notably in the Uxx component without any relevant impacts on performance.