Title : GOCE L1b Data Quality Control Report
       July 2013

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Distribution : GOCE Users Community
# DOCUMENT CHANGE RECORD

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1. INTRODUCTION

1.1 Purpose and Scope

This document contains the Quality report for GOCE L1b data for July 2013.

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.

<table>
<thead>
<tr>
<th>ABBREVIATION</th>
<th>MEANING</th>
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<tbody>
<tr>
<td>EGG</td>
<td>Electrostatic Gravity Gradiometer</td>
</tr>
<tr>
<td>DFACS</td>
<td>Drag Free and Attitude control system</td>
</tr>
<tr>
<td>SST-I</td>
<td>Satellite-to-satellite tracking instrument</td>
</tr>
<tr>
<td>CTR</td>
<td>Control Voltages</td>
</tr>
<tr>
<td>STR</td>
<td>Star Tracker</td>
</tr>
<tr>
<td>Trace SD</td>
<td>Trace Spectral Density</td>
</tr>
<tr>
<td>ICM</td>
<td>Inverse Calibration Matrix</td>
</tr>
<tr>
<td>GAR</td>
<td>Gradiometer Angular Rates</td>
</tr>
<tr>
<td>FPM</td>
<td>Fine Pointing Mode</td>
</tr>
<tr>
<td>MBW</td>
<td>Measurement Bandwidth</td>
</tr>
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</table>
2. JULY 2013 OVERVIEW

13-18 Jul 2013

29-Jul-13
Beam out event at UTC 20:08:57

31-Jul to 01-Aug 13
Instrument Calibration

3. JULY 2013 DATA QUALITY ANALYSIS

3.1 Beam Out events

The following Beam Out events occurred during July 2013 reference frame:

<table>
<thead>
<tr>
<th>EVENT</th>
<th>UTC TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>29-Jul-13</td>
<td>Beam out event at UTC 20:08:57</td>
</tr>
</tbody>
</table>

Table 1 Beam out events

The effects of a Beam Out event are clearly visible in the common mode acceleration, component 14_x, as a sharp peak in the acceleration values. The effect is the same as reported in previous monthly reports.

3.2 Gradients outliers on 13th – 18th of July

A series of outliers have been found in gradient Uxx and common mode acceleration in the flight direction. Two big events with impacts on performance occurred at UTC 13/07 23:42:40 and 14/07 17:22:30. Below the gradients time series which show the two big events:

Figure 1 Gradients time series
The PSDs of the common mode accelerations as well as the one of the trace are reported, showing the effects of the two big outliers:

![Figure 2 CM PSD (left) and trace PSD (right)](image)

3.3 Instrument calibration

Special Spacecraft Operations for Instrument Calibration were performed on 31st July 2013, from

- 20130731T143819

   to

- 20130801T142404

Nominal EGG data are not available between the two times above.