17th GERB International Science Team (GIST) meeting

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Context

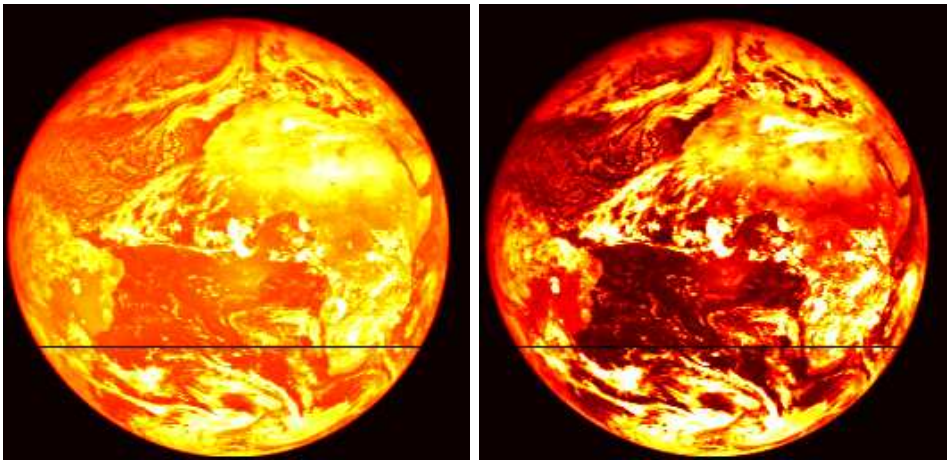
This 17th GIST meeting was hosted by Prof. John Harries at Imperial College. The meeting took place some weeks after the start of operation of the Geostationary Earth Radiation Budget (GERB) instrument on the first Meteosat Second Generation (MSG-1) satellite. The meeting aimed to focus on instrument issues and the time for science presentations was reduced to the minimum.

First results and commissioning activities

The first GERB shortwave and totalwave images have been presented to the team as well as the first data animations at the 15' temporal resolution. Even if the MSG-1 spacecraft already experienced some electronic failures (see after), the GERB did not reveal any problem, (the problem of the flat safety battery which was known before the launch).

The instrument is operated since December 12th 2002 in its different scanning modes. As it is directly visible the non rectified data (levels 0, 1 and 1.5),

one of the 256 GERB detectors is dead, probably due to launch shock. The figures bellow show typical GERB total (left) and shortwave (right) images.



For the safety of the instrument, the team decided to turn it off during its first eclipses season (February 12th to April 26th).

Project status

The different partners (ESA, EUMETSAT, IC, RAL and RMIB) involved with GERB presented the current status of the project within their institutions.

An awaited status report was the one of MSG-1 and SEVIRI by EUMETSAT. At this stage of the commissioning, the SEVIRI instrument is working fine but the data dissemination by the MSG-1 spacecraft will not be possible due to the failure of a solid state power amplifier (SSPA). To overcome the problem, the SEVIRI data will probably be disseminated using DVB broadcast methods, as for commercial television.

The imperial college team provided some explanations concerning the great variability which was observed in the spectral response curves $s(\lambda)$ of the different GERB detector. It seems now that a large part of this variability was introduced by the instrumental set-up used to characterize the instrument and may possibly be removed in the future. In the interim, the spectral response curves averaged on the 256 detectors must be used.

First results from the RMIB GERB data processing have been presented. This was the occasion to show the first GERB longwave image obtained by subtraction of the shortwave contribution to the total radiation measurement. It was shown that, due to non-repeatability of the GERB line of sight, the LW image appears "noisy" during day time. It was shown that the Meteosat-7 imager may be used to removed this processing noise.

RMIB also presented the parameterization of a simple method to unfilter the instrument data. This simple method may supply the use of SEVIRI data as long as the SEVIRI is in commissioning.

Science presentations

Different partners presented their plans for future use of the GERB data. The UK Met Office presented early results based on the first GERB data. Others presentations used the old GERB-like data, derived by Meteosat-7. Due to lack of time, a RMIB science contribution has been postponed to the next GIST meeting.

Next meeting

The next meeting will be hosted by the University of Valencia this spring.