Data quality report - Leica RCD105 medium format camera

Radiometric Calibration

Due to the large size of the camera CCD the data is extracted via separate channels, one for the right hand side and one for the left hand side of the CCD. The components that read the data off the CCD are sensitive to temperature variations and, especially in conditions where overflows and underflows occur, these effects can be seen in the photos. Using the Leica processing package, the images are processed using a technique where the left/right channel differences are modelled out to try and remove these effects. Even so, over ice/water and highly reflective surfaces these effects may still be seen as a discontinuity in the centre of the image.

Figure 1: The same scene processed without using auto contrast or left/right balancing (top image) and with using these options (bottom image).

It is for these reasons that we believe the image pixel data values to be of low scientific use for radiance measurements.
**Geometric Calibration**

Currently the delivered images are tagged with information regarding the position and attitude of the aircraft when the photograph was acquired. The photographs are NOT mapped or geocorrected in any way.

As of November 2009 there is no boresight information for the camera, so without additional ground control points the images cannot be accurately geolocated.

**Camera Parameters**

The ARSF Leica RCD105 is a 39 megapixel digital camera. It has the following characteristics:

- 60mm lenses (changeable), with 44.2 degree x 34.0 degree field of view (FOV)
- fixed aperture (f-4.0)
- pixel size 6.8microns (= ~15cm ground resolution at 1350m)

Please contact us (arsf-processing@pml.ac.uk) if you intend to orthorectify your photographs and require boresight information.