Evolution of IASI products and dissemination

Principal Component Compressed Spectra Products

- **Noise Reduced representation of IASI re-sampled apodised spectra (Level 1c) by Principal Component Analysis (PC) Scores**

  - **Theoretical basis**: “Support study on IASI Level 1c Data Compression - Final Report”, A.C.L. Lee and S. Bedford, 2004
  - **Operational Implementation**: one set of eigenvectors per IASI band (1 to 3), compatible with AAPP software
  - **Performance**: please refer to poster by T. Hultberg *et al.*

### Changes in Level 1 Products

- **Quality Flag** (Boolean) will be set per band
  - This increases the availability of good B1 and B2 spectra when only B3 is degraded
- **Detailed Quality Flag** (16-bit)
  - Provides details on degradation cause

- **Co-located and averaged IIS and AVHRR images for each IASI Field Of View**
  - **Cloud fraction (%) from AVHRR**
  - **Land and Coast fraction (%) from AVHRR**

**Cloud fraction**:

\[
\text{Cloud fraction} = \frac{\text{Area Pixel with Cloud flags \& IIS}}{\text{Target Area}}
\]

**Land / coast fraction**:

Same as for the Cloud fraction, taking as C the set of land and coast AVHRR pixels in the IASI FOV.

The AVHRR L1b cloud mask, bits 0-3, is used to compute C. That information is derived from the land/mar mask applied in the processing.

**Schedule**

- **15/03/2010**: Change of format for IASI L1c products in NRT on EUMETCast (BUFR format) and offline in EUMETSAT Data Centre U-MARF
- **2nd Quarter 2010**: Start of trial dissemination of PC Compressed spectra in parallel with full spectra
  - PC Scores on EUMETCast (BUFR format) and offline
  - PC Residuals offline
- **2nd Quarter 2012**: Launch and commissioning of Metop-1, to be renamed Metop-B. When in routine operation,
  - Full spectra of IASI on Metop-B on EUMETCast and offline
  - PC Scores of IASI on Metop-A on EUMETCast, PC scores, residuals and full spectra offline

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