

GAIA-CLIM

Work Package 2, Task 2.2

Progress report on the uncertainty estimates identified for baseline network

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GAIA-CLIM GA, ECMWF, Reading (UK), 6-7 February 2017



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 640276.

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Task 2.2: Identifying a defensible set of uncertainty estimates for certain ECVs with baseline and comprehensive measurement capabilities as identified by WP1

(lead: BKS; involved: CNR, KNMI, MO), start: M12, end: M36

People involved: Karin Kreher, Peter Thorne, Fabio Madonna, Tim Oakley, Ed Stone, KNMI person TBD

- A **brief definition of baseline status**: networks that are **well characterised** and have a **long-term monitoring commitment**.
- As part of WP1, the **GAIA-CLIM maturity matrix** approach was used to assess which network/ECV is **of baseline capability** & a maturity matrix table has been created.
- Baseline networks are characterised by an **average of a score of 3-4** in the maturity matrix.



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Based on this MM table, 6 networks/ECVs identified as being of baseline capability and of interest to GAIA-CLIM:

- 1. GUAN (radiosondes, temperature & water vapour profiles)**
 - 2. SHADOZ (ozonesondes, ozone profiles)**
 - 3. GSN (surface temperatures)**
 - 4. ACTRIS (surface aerosol)**
 - 5. MWRnet (water vapour profiles)**
 - 6. Aircraft observations**
- To thoroughly investigate these networks and corresponding ECVs → to identify a defensible set of bias and uncertainty estimates for these measures.
 - To undertake an extensive characterisation of the ‘accepted best practice’ used within the measurement protocols, the uncertainty assessment and traceability of the ECVs of interest summarized in final report (D2.7, M33)



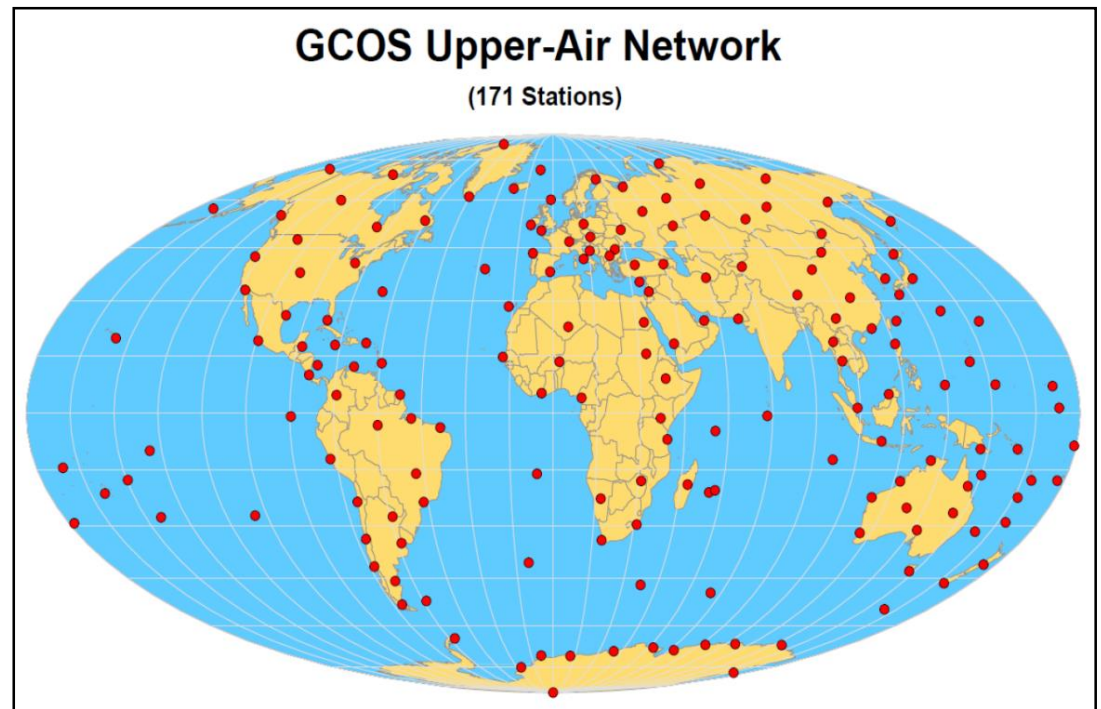
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GUAN as case study for the progress report (D2.4)

Scope of GUAN: To comprise the **best possible set of radiosonde stations** with a spacing of between **5 to 10 degrees latitude**, sufficient to resolve synoptic-scale waves. Parameters are **temperature**, **pressure** (geopotential height), **wind**, and **humidity** (at least in the troposphere).

Map of the 2016 status of the network with 171 stations nominated to the GUAN



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Inclusion criteria are:

- Commitment by NMHSs (National Meteorological and Hydrological Services) with regard to continuity
- Length and quality of historical time series
- Current measurement quality

Purposes of GUAN:

- To establish national commitments for the preservation of a minimum set of upper-air stations for the foreseeable future.
- To build a collection of validated data from these stations in standardized formats.
- To provide this information to the global climate community with no formal restrictions.

Task 2.2: Use all available literature to identify and describe the uncertainty estimates for these baseline network products and connect to the corresponding type reference network (GRUAN).



Provide a good understanding for the VO about what is still missing within the baseline type data set.



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