

MWRnet

An international network of ground-based microwave radiometers

Towards the definition of best practices for sustainable long-term ground-based MWR observations

Contacts:

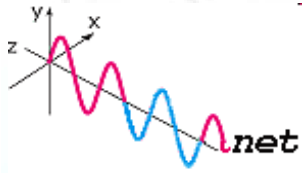
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Contributors:

Reinout Boers, Maria Cadeddu, Jürgen Güldner, **Fabio Madonna**,
Dave Turner

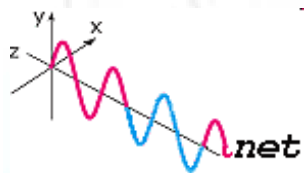
MWRnet - <http://cetemps.aquila.infn.it/mwrnet>



MWRnet

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- MWRnet stands for “International network of ground-based microwave radiometers”.
- MWRnet started in March 2009
 - Website: <http://cetemps.aquila.infn.it/mwrnet>
- MWRnet is completely on voluntary base, i.e.
 - No “national” network or support
 - No coordination and/or infrastructure support
- MWRnet aims to facilitating the exchange of knowledge, best practise and data in the MWR community
- MWRnet includes different kinds of MWRs
 - single-channel T profilers
 - dual channel IWV + LWP radiometers
 - multichannel T & WV profilers



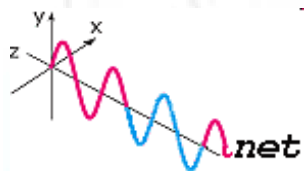
<http://cetemps.aquila.infn.it/mwrnet>

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- About 35 members, more than 75 MWR world wide

MWRnet - An International Network of Ground-based Microwave Radiometers

The screenshot displays the MWRnet website interface. On the left is a navigation menu with sections for 'Home', 'Information' (including 'What is MWRnet?', 'News', 'More information', 'Picture Gallery', 'Contacts'), and 'Community' (including 'How to join', 'Members', 'The network', 'MWRnet library', 'Software'). The main content area features a world map with numerous colored pins representing radiometer locations. A legend at the bottom identifies the pin colors: red for TV profiler, green for T profiler, blue for V profiler, yellow for IWV/LWP, and grey for Other. The map also includes a scale bar (5000 mi / 5000 km), a 'POWERED BY Google' logo, and a 'Terms of Use' link. The footer indicates the site was last updated on 09 Feb 2011 and was designed by N.C. - Powered by HIMET.



<http://cetemps.aquila.infn.it/mwrnet>

MWRnet - <http://cetemps.aquila.infn.it/mwrnet>

- About 25 MWR in Europe

MWRnet - An International Network of Ground-based Microwave Radiometers

Map | Satellite | Terrain

Home

Information

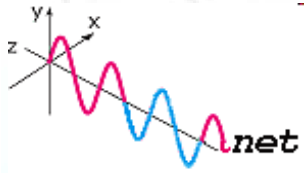
- What is MWRnet?
- News
- More information
- Picture Gallery
- Contacts

Community

- How to join
- Members
- The network
- MWRnet library
- Software

Last update: 09 Feb 2011

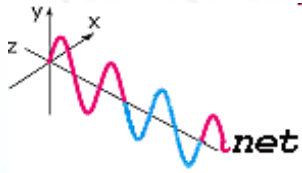
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MWRnet for GRUAN

MWRnet - <http://cetemps.aquila.infn.it/mwrnet>

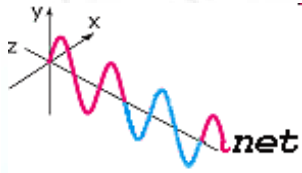
- GRUAN sites linked with MWRnet:
 - Europe:
 - Cabauw, Lindenberg, Payerne, Potenza, Sodankylä
 - World wide
 - ARM sites
 - Barrow, Lamont, Nauru, Darwin, Manus
 - Currently, just 4 GRUAN sites are not in MWRnet
 - Boulder, Beltsville, Xilin Hot, Lauder



MWRnet for GRUAN

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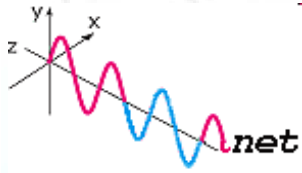
- The most difficult part is finding a suitable mechanism for support.
- A proposal was submitted to an EU FP7 call focused on "Integration of European activities within GEO".
- Title: A European MicrowavE Radiometer network within GEo (EMERGE)
- Idea: spin MWRnet activities on a reduced set of MWR sites already involved with GEO, i.e. EU GRUAN sites
- Contributors:
 - Domenico Cimini, IMAA-CNR, Potenza
 - Ulrich Lohnert, University of Köln, Germany
 - Reinout Boers, KNMI, The Netherlands
 - Roger Saunders, MetOffice, Exeter
 - MWR mentors from European GRUAN sites
 - Fabio Madonna, IMAA-CNR, Potenza
 - Rigel Kivi, FMI, Sodankyla
 - Jürgen Güldner, DWD, Lindenberg
 - Olaf Maier, Meteoswiss, Payerne



EMERGE

MWRnet - <http://cetemps.aquila.infn.it/mwrnet>

- **Overarching goal:** establish the “best practice” for making MWR observations and retrievals.
- **Objective:** Facilitate the registration and global access of well documented and quality controlled MWR observations and retrievals with errors
- **Activities (of GRUAN's interest):**
 - Optimum calibration, QC procedures and data handling
 - Common retrieval algorithms for atmospheric parameters
 - Error analysis (from observations to retrievals)
 - Inventory of past and current MWR data sets
 - Integration of MWR data with other GRUAN activities
- But unfortunately...
 - EMERGE was not funded!



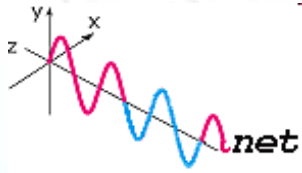
Next steps for MWRnet

MWRnet - <http://cetemps.aquila.infn.it/mwrnet>

- Increasing membership
 - Joining is quick and easy (just fill a form on the web)
 - Members have access to:
 - Information on activities, proposals,...
 - MWRnet library (papers from 1992)
 - MWR FAQs (to do)
 - Code and data (to do)

- Involvement in international projects
 - COST EG-CLIMET
 - HyMeX

- Tasks to be pursued
 - Coordination
 - Calibration and QC protocols, data harmonization

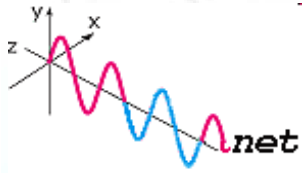


MWRnet in EG-CLIMET

MWRnet - <http://cetemps.aquila.infn.it/mwrnet>

- Special working group (19 Nov 2010, Cologne)
 - Measurement modes
 - Common calibration and/or calibration control procedures
 - Common quality control
 - Common retrieval algorithms (conversion tools)
 - Metadata & data formats
 - Towards the establishment of the MWRnet

- "Training school" (14-16 March, 2011, Cologne)
 - Reprocessing of MWR data from standard instruments
 - Application of data quality control
 - Generation of harmonized retrieval products
 - Focus on GRUAN sites
 - Towards on-line processing
 - Distribution of processing software

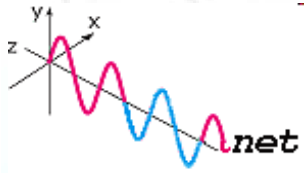


Summary and conclusions

MWRnet - <http://cetemps.aquila.infn.it/mwrnet>

- MWRnet is (slowly) consolidating
- Most of the MWRnet goals and activities seem of GRUAN interest
- Indeed, the "best practices" recommended by MWRnet will be initially tested at some GRUAN sites
- Representatives from the other GRUAN sites are welcome to join MWRnet and participate to these activities
- Any suggestion about fund raising is of course more than welcome!

Thank you very much for your attention!



List of Acronyms

MWRnet - <http://cetemps.aquila.infn.it/mwrnet>

- ECV Essential Climate Variable
- FCDR Fundamental Climate Data Record
- GCOS Global Climate Observing System
- GEO Group on Earth Observations
- GEOSS Global Earth Observation System of Systems
- GMES Global Monitoring for Environment and Security
- GRUAN GCOS Reference Upper Air Network
- LUAMI Lindenberg Upper-Air Methods Intercomp. Camp.
- MWR Microwave radiometer