



Task Force on Hemispheric Transport of Air Pollution

Joint WMO/TF HTAP/GEO Workshop on Integrated Observations for Assessing Hemispheric Transport

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SUMMARY

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Workshop findings - a

- This workshop has focused on ozone and its precursors.
- Numerous examples exist of observational evidence of intercontinental transport of air pollutants: background and episodes
- Increased intercontinental transport may depend on several factors: increased emissions (size and patterns), changed climate, changed chemistry (oxidising capacity)
- Background ozone has increased in many places and these observations have not yet been explained
- WMO, GEOSS, EMEP and national observation programmes cover, in part, the observational needs of regional air pollution model evaluation but there are significant gaps for understanding intercontinental air pollution transport

Workshop findings - b

- Validation of models made for different purposes and with different datasets ranging from ocular inspection to advanced assimilation techniques
- Several studies on source regions and outflow and on atmospheric processes – few studies on the deposition of air pollution.
- Assessments of mass flow and source apportionment are possible through the combination of observations and models
- Assimilation of observations in models can be used to estimate source strengths
- ...

Workshop recommendations

- Observational evidence should be used systematically for validation of CTMs – improvements of the EI and model processes and identifying observational needs
- New ideas for source apportionment and assessment of S/R relationships should be explored
- Benchmarking for validation of HTAP models - uncertainty analysis
- Observational time series could be used test models performance
- Observational data bases have to be accessible for validation of models. The quality of the observations needs to be qualified. This implies a need for a core dataset of observations with known quality

Workshop recommendations

- Important role of coordination of regional initiatives e.g. EMEP and international organisations WMO, GEO and national authorities (e.g. Environment Agencies).
- There is a need to continue observation and extend it – high priority in medium and long term to improve observations above oceans, high altitudes and vertical soundings of key parameters at supersites.
- The TF HTAP jointly with EMEP, WMO, GEO ... should continue the efforts to improve the observational bases for HTAP and the interoperability of data.
- TF HTAP should revisit the issue (integrated observations) before 2009 covering also the other pollutants such as PM, Hg, POPs and development of GEOSS

Possible Next Steps

- HTAP Model-Obs “Test Bed/Benchmark”
 - A virtual data center designed to meet the needs of the TF HTAP model intercomparison and evaluation exercise
 - Archives of key observations and model data (do gaps exist?)
 - Tools for model and data comparisons
- Promote/Develop Standards and Conventions
 - Cooperatively with WMO, GEO, AC&C
 - Comparability of obs data (documentation, QA/QC, ...)
 - Compatibility of software tools (formats, ...)
- Recommendations to GEO and other efforts
 - Long term funding for atmos comp obs
 - Commitment to FT/HTAP Sites (e.g., Pico, Mt. Bachelor, Cape Verde, ...)
 - Future Satellite Gap
 - Importance of Vertical Profiles
 - Regional Network Interoperability via WMO/GAW
 - Links/Value to various user communities of Atmos Composition Information

