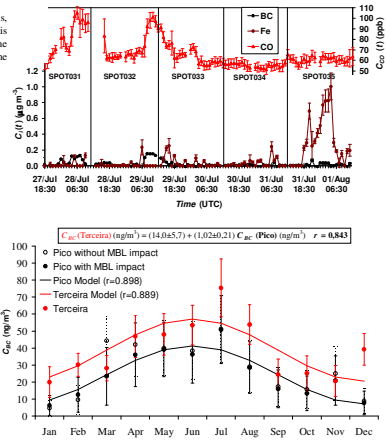


The figure represent the BC and iron (present on dust) aerosol concentrations, monitored and sampled at Pico Mountain site with one Aethalometer (AE31). This information is compared with the Carbon Monoxide also sampled during the same period. The black dotted vertical lines identify the point of end/start of the aethalometer sampling spots.

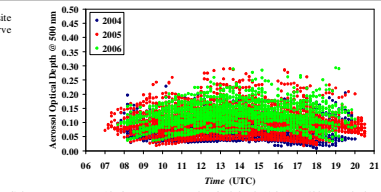
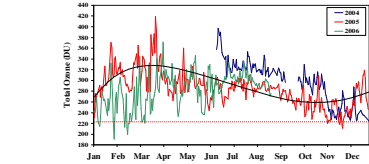


AZORES Observation Network - AZONET

José Agostinho site (38°39'36"N, 27°13'26" W, 90 m)

Monthly averages of BC aerosol from July 2001 through December 2004, calculated from the Aethalometer measurements after removing the dust contamination.

Color curves represent daily average values of total Ozone column, measured at José Agostinho site with the BREWER MKII (#102), from mid June 2004 through mid August 2006. The black curve pretends to represent the seasonal behavior of the total Ozone column.



Color spots represent 10min average aerosol optical depth (AOD) at 500nm, calculated from the data measured (5s time resolution) at José Agostinho site with the four wavelength photometer (SP02 - 412, 500, 675, 872 nm) from 7. August 2004 through 15. May 2006.

Papers Submitted for publication with data from AZONET

- 1- G.A. Pio, M. Legrand, T. Oliveira, J. Alfonso, C. Santos, P. Fialho, H. Puxbaum, A. Gelencsér, S. Preunkert, M. Schock. 2006. Climatology of aerosol composition (organic versus inorganic) at non-urban areas on a West-East transect across Europe. *Journal of Geophysical Research – Atmospheres*, Composition and Chemistry Special Issue.
- 2- T. Oliveira, C.A. Pio, A.J.D. Silvestre, M. Evtvygina, J. Alfonso, P. Fialho, M. Legrand, H. Puxbaum, A. Gelencsér. 2006. Seasonal variation of particulate organic compound concentrations at background sites in Europe. *Journal of Geophysical Research – Atmospheres*, Composition and Chemistry Special Issue.
- 3- T. Oliveira, C.A. Pio, A.J.D. Silvestre, C. Alves, M. Evtvygina, J. Alfonso, P. Fialho, M. Legrand, H. Puxbaum, A. Gelencsér. 2006. Organic tracers in atmospheric aerosols collected over a transect from the Atlantic Ocean to Central Europe. *Journal of Geophysical Research – Atmospheres*, Composition and Chemistry Special Issue.
- 4- M. Freitas, I. Dionisio, P. Fialho, F. Barata. 2006. Aerosol chemical elemental mass concentration of lower free troposphere. *Journal of Nuclear Instruments and Methods*.
- 5- F. Barata, P. Fialho. 2006. Black Carbon (BC) mass concentrations monitoring at North Atlantic Marine Boundary Layer (MBL). *6th International Symposium on Advanced Environmental Monitoring* proceedings, Heidelberg, 27-30 June, Germany.

Papers Published or Accepted for Publication with data from AZONET

- 1- J. Kleissl, R. E. Honrath, R. C. Owen, M. Val Martin, M. P. Dzioabak, D. Helmig, D. Tanner. 2006. The occurrence of upslope flows at the Pico mountain observatory: a case study of orographic flows on small, volcanic islands. *J. Geophys. Res.*, in press.
- 2- C. Alves, T. Oliveira, C.A. Pio, A.J.D. Silvestre, P. Fialho, F. Barata, M. Legrand. 2006. Characterisation of carbonaceous aerosols from the Azorean island of Terceira. *Accept for publication in the Atmospheric Environment*. *ATMENV-D-06-00778R1*.
- 3- M.Val Martin, R.E. Honrath, R.C. Owen, G. Pfister, P. Fialho, F. Barata. 2006. Significant enhancements of nitrogen oxides, black carbon, and ozone in the North Atlantic lower free troposphere resulting from North American boreal wildfires. *Journal of Geophysical Research – Atmospheres*, 111, D23S60, DOI:10.1029/2006JD007530.
- 4- G. G. Pfister, L. K. Emmons, P. G. Hess, R. Honrath, J.-F. Lamarque, M. Val Martin, R. C. Owen, M. A. Avery, E. V. Browell, J. S. Holloway, P. Nedelec, R. Purvis, R. B. Ryerson, G. W. Sachse, and H. Schlager. 2006. Ozone production from the 2004 North American boreal fires. *J. Geophys. Res.*, 111, D24S07, DOI:10.1029/2006JD007695.
- 5- M. Val Martin, R. E. Honrath, R. C. Owen, G. Pfister, P. Fialho, and F. Barata. 2006. Significant enhancements of nitrogen oxides, black carbon and ozone in the North Atlantic lower free troposphere resulting from North American boreal wildfires. *J. Geophys. Res.*, 111, D23S60, doi:10.1029/2006JD007530.
- 6- R. C. Owen, O. Cooper, A. Stohl, and R. E. Honrath. 2006. An analysis of the mechanisms of North American pollutant transport to the central North Atlantic lower free troposphere. *J. Geophys. Res.*, 111, D23S58, doi:10.1029/2006JD007062.
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- 11- P. Fialho, A.D.A. Hansen, R.E.Honrath. 2005. Absorption Coefficients by Aerosols in Remote Areas: A New Approach to Decouple Dust and Black Carbon Absorption Coefficient Using Seven-Wavelength Aethalometer data. *Journal of Aerosol Science*, 36(2), 287-292, DOI:10.1016/j.jaerosci.2004.09.004.
- 12- R. E. Honrath, R.C. Owen, M.Val Martin, J.S. Friedl, E. Prins, P. Fialho, M.P. Dzioabak, K. Lapina, J. Kleissl. 2004. Regional and hemispheric impacts of anthropogenic and biomass burning emissions on summertime CO and O3 in the North Atlantic lower free troposphere. *Journal of Geophysical Research – Atmospheres*, 109, D24310, DOI:10.1029/2004JD005147.

PICO Mountain site (38,471°N; 28,403°W; 2225 m)

Base Aérea #4 Lajes

CLIMAAT-TERCEIRA-NARE site (38,775°N; 27,360°W; 145m)

Collaborators:
The implementation of this atmospheric observation network has been supported by a number of international collaborators and agencies:

Portugal: University of Azores, Meteorological Institute, Association for the Study of the Insular Environment, Air Force (Base das Lajes), Regional Civil Protection, Madalena do Pico Fire Department, Terceira Customs, Regional Government of Azores.

United States of America: Michigan Technological University, University of Colorado - Boulder, Air Force, American consulate.
Sponsors:
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CLIMAAT

Triangles represent the remote GAW sites (Red - Below 1000 m a.s.l.; Green - Above 1000 m a.s.l.)

- ### Actual Measurements
- José Agostinho**
University of Azores and Meteorological Institute
- Meteorological instrumentation
 - Pressure
 - Temperature
 - Relative humidity
 - Win Direction
 - Win Velocity
 - UV-Radiation (BREWER MK-II)
 - Ozone total column
 - Sulphur dioxide total column
 - Sun tracker (Kipp&Zonen AP2)
 - Longwave downwelling radiation flux (Kipp&Zonen CG4)
 - Direct solar irradiance (Eppley NIP)
 - Global radiation (Kipp&Zonen CM11)
 - Diffuse radiation (Kipp&Zonen CM11)
 - Aerosol optical depth (Middleton SP02^{25SPH})

- ### CLIMAAT-TERCEIRA-NARE
- University of Azores
- Aethalometer (AE-31)
 - Aerosol absorption coefficients
 - Meteorological instrumentation
 - Pressure
 - Temperature
 - Relative humidity
 - Win Direction
 - Win Velocity
 - NDIR (ADC model RF2G)
 - Carbon Dioxide
 - UV absorption (DASIBI - 1003 PC)
 - Ozone

- ### BASE A4 - Lajes
- Meteorological Institute
- Radio soundings (RS92-SGP)

- ### Pico Mountain
- University of Azores
- Aethalometer (AE-31)
 - Aerosol absorption coefficients

- ### Michigan Technological University
- Meteorological instrumentation
 - Pressure
 - Temperature
 - Relative humidity
 - Win Direction
 - Win Velocity
 - NDIR (Modified Thermo Environment Inc. Model 48C-TL)
 - Carbon Monoxide
 - UV absorption (Thermo Environment Inc. Model 48C-TL)
 - Ozone
 - Developed by Mich. Tech. Univ.
 - Nitrogen oxides (NO, NO₂, NO_x)

- ### University of Colorado, Boulder
- Gas Chromatography
 - Non-Methane Hydrocarbons

Meteorological Balloon Lunching (Base A4 - Lajes:38°44'N, 27°04' W, 113 m)