

BRIEF CURRICULUM VITAE

Maria Tombrou-Tzella

Details: Married, 1 child / Female

Tel: +30210 7276935; fax +30210 7295281

mtombrou@phys.uoa.gr, <http://en.env.phys.uoa.gr>

Current position

2018-present, Division of Environmental Physics and Meteorology, Department of Physics, University of Athens, Greece, **Professor**

Previous positions

- 2009-2018, Division of Environmental Physics and Meteorology, Department of Physics, University of Athens, Greece, **Assoc. Professor**
- 1/2/2010-31/7/2010, National Center of Atmospheric Science (NCAR), Boulder Colorado, USA, **Visitor** during my sabbatical
- 1998-2009, Division of Environmental Physics and Meteorology, Department of Physics, University of Athens, Greece, **Assistant Professor**
- 1990-1998, Division of Environmental Physics and Meteorology, Department of Physics, University of Athens, Greece, **Lecturer**
- 1986-1990, Public Power Corporation, Department of Alternative Energy Forms. Responsible for a) Atmospheric pollution assessment b) Wind power potential estimation and wind turbine siting, especially in areas of complex terrain, **Permanent position**
- at the University of Athens, involved in the programs: a) Study of the horizontal and vertical distribution of ozone over Athens; b) Atmospheric pollution in Athens - study of conditions, parameters and mechanisms **Post-Doctoral Researcher**

Academic studies

- Ph.D., 1980-1983 Department of Environmental Sciences, Lancaster University, England, in the field of Atmospheric Physics; Supervisor: Dr. Robin McIlveen, Thesis: "*Vertical diffusion of ozone in the low troposphere*"
- B. Sc., 1974-1979, Department of Physics, University of Athens

Scholarships

- 1974-1975 National Grands
- 1979-1980 BODOSSAKI Foundation Academic
- 1980-1983 Ministry of Coordination in conjunction with NATO scholarship
- 17-27/3/97 NATO Advanced Study Institute on Buoyant Convection in Geophysical Flows, Pforzheim, Germany

Research and projects (competitive)

- Safety and diffusion of radioactive releases in the atmosphere, 1983 – 1984, EU
- Study of the effect of special urban and architectural characteristics on the creation of pockets of high or especially low levels of atmospheric pollution proposals, 1984– 1985, EU
- An experimental study of the horizontal and vertical distribution of ozone over Athens, 1984 – 1985, EU
- Integration of wind power in the Greek generation system, 1989, EU
- Air pollution study over Thessaloniki, 1991–1992, Scientific and Technological Cooperation between RTD Organizations in Greece and Germany
- Measurements of wind speed and turbulence to improve wind field and gust spectra prediction models in complex terrain, 1991 – 1993, JOULE I, EU
- Sodar development for anemological qualification of complex topography sites suited to installation of medium - large size WTGs, 1994 – 1995, JOULE II, EU
- Modernization - Improvement of implementation and extension of the atmospheric pollution ground based monitoring, 1995 – 1996, LIFE, EU
- Human Capital and Mobility (1995 – 1996), Scientific and Technological Cooperation between RTD Organizations in Greece and Italy, EU
- European Topic Centre of Air Pollution, (1995-1998), 1995 -1998, EU
- Implementing short-term prediction at utilities – PREDICT, 1996 – 1998, EU

- Parameterization of convective and stable internal boundary layers into mass consistent models, 1998 – 1999, Scientific and Technological Cooperation between RTD Organizations in Greece and Italy, EU
- Integrated computational assessment via remote observation system – ICAROS, 1998– 1999, ENVIRONMENT AND CLIMATE, EU
- Cotton biomass energy recovery – COTTON, 1998 – 2000, JOULE III, EU
- Surface fluxes in climate system –SFINCS, 1998 – 2000, ENVIRONMENT AND CLIMATE, EU
- Integrated Computational Assessment of urban air quality via Remote Observation Systems network (ICAROS-NET), 2001-2004, Information System Technology, EU
- Three-dimensional modelling of the intercontinental transport of ozone and aerosols in the Eastern Mediterranean, Scientific and Technological Cooperation between RTD Organizations in Greece and USA, 2005-2007
- Environmentally Compatible Air Transport System (ECATS), 2004-2009, EU
- AEGEAN-GAME, European Facility for Airborne Research (EUFAR) Integrating Activity (227159) funded by EC 6 under FP7.
- On the estimation of future air-quality due to climate change in Europe, Co-financed by the European Social Fund (ESF) and Greek national funds through the Operational Program “Education and Lifelong Learning” of the (NSRF) — Research Funding Program: Heraclitus II.
- Supporting Postdoctoral Researchers / Education and Lifelong Learning 2012-2015; European Social Fund (ESF) and the Greek State.
- *Lead Scientist for the part undertaken from the University of Athens*

Journals

1. Lalas D., Tombrou M., Petrakis M., Asimakopoulos D. N. and Helmis C. G., (1987) ‘An experimental study of the horizontal and vertical distribution of ozone over Athens’, Atmos. Environ., 21, 2681 - 2693.
2. Asimakopoulos D. N., Helmis C. G., Petrakis M. and Tombrou M., (1993) ‘Atmospheric boundary layer field measurements over coastal areas’, Environmental Software, 8, 9 - 18.
3. Founda D., Tombrou M., Lalas D. P. and Asimakopoulos, (1997), ‘Some measurements of turbulence characteristics over complex terrain’, Boundary-Layer Meteorol., 83, 221 - 245.
4. Helmis C. G., Tombrou M., Asimakopoulos D. N., Soilemes A., Gusten H., Moussiopoulos N. and Hazaridou A., (1997) ‘Thessaloniki '91 Field Measurement Campaign. Part I: The wind field and the Atmospheric Boundary Layer structure over the Greater Thessaloniki area’, Atmos. Environ., 31, 1101 - 1114.
5. Helmis C. G., Papageorgas P. G., Asimakopoulos D. N., Tombrou M. and Petrakis M., (1997) ‘Evaluation of minisodar performance operating in high wind conditions over complex terrain’, Int. J. Remote Sensing, 18, 2289 - 2302.
6. Leeuw F., Berge E., Gronskei K. and Tombrou M., (1997) ‘Review on requirements for models and model applications’, Int. J. Environment and Pollution, 83, 91 - 400.
7. Tombrou M. and Founda D., (1998) ‘Wind profile diagnosis from surface routine meteorological data over a coastal area’, Boundary-Layer Meteorol., 87, 217-231.
8. Tombrou M., Bossioli E. and Lalas D., (1998) ‘Application of a Monte Carlo dispersion model in complex terrain’, Environmental Software, 13, 45-58.
9. Tombrou M., Founda D. and Boucouvala D., (1998) ‘Nocturnal boundary layer height prediction from surface routine meteorological data’, Meteorology and Atmospheric Physics, 68, 177-186.
10. Castino F. and Tombrou M., (1998) ‘Parameterization of convective and stable internal boundary layers into mass consistent models’, J. of Wind Engineering and Industrial Aerodynamics, 74, 239.
11. Koussis A., Smith M., Akylas E. and Tombrou M., (1998) ‘Groundwater drainage flow in a soil layer resting on an inclined leaky bed’, Water Resources Research, vol. 34, no. 11, 2879-2887.
12. Sarigiannis, N. I. Sifakis, N. Soulakellis, K. Schafer, M. Tombrou, (1998) ‘A new approach to environmental data fusion for integrated assessment of particulate matter loading and its effect on health in the urban environment’, Int. J. Remote Sens., 19, 3289-3300.

13. Tombrou M., E. Bossioli, D. Boucouvala and E. Vlahou, (2000) 'Intercomparison of different regulatory and Eulerian dispersion models: an application for the electric power plant in Rhodes Island', Int. J. Environ. Pollut., 14(1-6), 1-6, 469-479.
14. Tombrou M., D. Founda, V. Tsadari and D. Lalas, (2000) 'Methodologies for atmospheric pollution assessment and the procedures for environmental permits in large combustion plants in Europe', Int. J. Environ. Pollut., 14(1-6), 208-216.
15. Akylas E., Tombrou M., Lalas D. and Zilitinkevich S. S., (2001) 'Surface Fluxes under Shear-Free Convection', Q. J. Roy. Meteor. Soc., 127, 1183-1197.
16. Piringer, M., Grimmond, C.S.B., Joffre, S.M., Mestayer, P., Rotach., M., Baklanov, A., De Ridder, K., Ferreira, J., Guilloteau, E., Karppinen, A., Martilli, A., Masson, V., Middleton, D.R. and Tombrou, M. (2002) 'Investigating the Surface Energy Balance in Urban Areas - Recent Advances and Future Needs'. Int. J. on Water, Air and Soil Pollution: Focus 2 (5-6), 1-16.
17. Dantou A., Bossioli E., Tombrou M., Sifakis N., Paronis D., Soulakellis N., Sarigiannis D. (2002), 'The importance of mixing height in characterising pollution levels from aerosol optical thickness derived by satellite', Int. J. on Water, Air and Soil Pollution: Focus 2, 17-28.
18. Bossioli E., M. Tombrou and C. Pilinis, (2002) 'Adapting the speciation of the VOCs emission inventory in the Greater Athens area', Int. J. on Water, Air and Soil Pollution: Focus 2, 141-153.
19. Sarigiannis D., N. Soulakellis, K. Schafer, M. Tombrou, N. I. Sifakis, D. Asimakopoulos, M. Lointier, E. Bossioli, A. Dantou, M. Saisana, (2002) 'ICAROS: An integrated computational environment for the assimilation of environmental data and models for urban and regional air quality', Int. J. on Water, Air and Soil Pollution: Focus 2(5), 641-654.
20. Akylas E., Y. Tsakos, M. Tombrou and D. Lalas, (2003), 'Measurements of surface fluxes over complex terrain under convective conditions', Q. J. Roy. Meteor. Soc., 129, 1929-1943.
21. Soulakellis, N., N. Sifakis, M. Tombrou, D. Sarigiannis and K. Schäfer, (2004) 'Estimation and mapping of aerosol optical thickness over the city of Brescia - Italy using diachronic and multiangle SPOT 1, SPOT 2 and SPOT 4 imagery', Geo Carto Journal, 19(4), 57-65.
22. Akylas V. and M. Tombrou, (2005), 'Interpolation between Businger-Dyer Formulae and Free Convection forms: A revised approach', Boundary-Layer Meteorol., 115(3) 381-398.
23. Athanasopoulou E., Bossioli E. and Tombrou M. (2005) 'Modelling of aerosol in the Greater Athens Area, Greece', Int. J. Environ. Pollut., 24, 230-246.
24. Dandou A., M. Tombrou., E. Akylas, N. Soulakellis and E. Bossioli E. (2005) 'Development and evaluation of an urban parameterization scheme in the Penn State/NCAR Mesoscale Model (MM5)', Journal of Geophysical Research- Atmospheres, 110, D10102
25. Protonotariou, A., Bossioli, E., Athanasopoulou, E., Dandou, A., Tombrou, M., Flocas, H.A., Helmis, C.G., and Assimakopoulos, V.D. (2005) 'Evaluation of CALPUFF modelling system performance: an application over the Greater Athens Area, Greece', Int. J. Environment and Pollution, 24(1/2/3/4), 22-35.
26. Zilitinkevich, S. S., Hunt, J. C. R., Grachev, A. A., Esau, I. N., Lalas, D. P., Akylas, E., Tombrou, M., Fairall, C. W., Fernando, H. J. S., Baklanov, A. and S. M. Joffre (2005) 'The effect of large eddies on the convective heat/mass transfer over complex terrain: advanced theory and its validation against experimental and LES data'. Croatian Meteorological Journal, 40, 20-26.
27. Zilitinkevich S. S., J. C. R. Hunt, A. A. Grachev, I. N. Esau, D. P. Lalas, E. Akylas, M. Tombrou, C. W. Fairall, H. J. S. Fernando, A. Baklanov and S. M. Joffre (2006) 'The influence of large eddies on the surface layer turbulence'. Q.J.R. Meteorol. Soc., 132, 1423-1456.
28. Bossioli E., Tombrou M., Dandou A., and Soulakellis N. (2007) 'Simulation of the effects of critical factors on ozone formation and accumulation in the Greater Athens Area'. Journal of Geophysical Research- Atmospheres, 112, D02309,
29. Tombrou M., A Dandou, C. Helmis, E. Akylas, G. Aggelopoulos, H. Flocas, V. Assimakopoulos and N. Soulakellis, (2007) 'Model evaluation of the atmospheric boundary layer and Mixed-layer evolution', Boundary-Layer Meteorol., 124, 61-79.
30. Piringer M., S. Joffre, A. Baklanov, A. Christen, M. Deserti, K. D. Ridder, S. Emeis, P. Mestayer, M. Tombrou, D. Middleton, K. Baumann-Stanzer, A. Dandou, A. Karppinen and

- J. Burzynski, (2007), 'The surface energy balance and the mixing height in urban areas—Findings and recommendations of COST-Action 715', Boundary-Layer Meteorol., 124(1), 3–24.
31. Synnefa A., Dandou A., Santamouris M., Tombrou M. and Soulakellis N. (2008) 'On the use of cool materials as a heat island mitigation strategy', J. of Applied Meteorology and Climatology, 47, 2846–2856
 32. Athanasopoulou E., M. Tombrou, S. N. Pandis, and A. G. Russell (2008) 'The role of sea-salt emissions and heterogeneous chemistry in the air quality of polluted coastal areas', Atmos. Chem. Phys., 8, 5755-5769
 33. Dandou A., M. Tombrou and N. Soulakellis, (2009) 'The influence of the city of Athens in the evolution of the sea-breeze front', Boundary-Layer Meteorol., 131:35–51
 34. Bossioli E., M. Tombrou, A. Dandou, E. Athanasopoulou and K. B. Varotsos (2009), The Role of Planetary Boundary-Layer Parameterizations in the Air Quality of an Urban Area with Complex Topography, Boundary-Layer Meteorol., 131(1), 53–72.
 35. Dandou A., M. Tombrou, K. Schäfer, S. Emeis, A. Protonotariou, E. Bossioli N. Soulakellis and P. Suppan (2009) 'A comparison between modeled and measured mixing layer height over Munich', Boundary-Layer Meteorol., 131, 3425-440.
 36. Tombrou M., Bossioli E., Protonotariou A., Flocas H., Giannakopoulos C., Dandou A. (2009) 'Coupling Geos-Chem With A Regional Air Pollution Model For Greece ', Atmos. Environ., 43(31), 4793-4804.
 37. Athanasopoulou, E., M. Tombrou, A.G. Russell, A. Karanasiou, K. Eleftheriadis, A. Dandou (2010), 'Implementation of road and soil dust emission parameterizations in the aerosol model CAMx: Applications over the greater Athens urban area affected by natural sources', J. Geophys. Res., 115, D17301.
 38. Protonotariou, A. P., Tombrou, M., Giannakopoulos, C., Kostopoulou, E. and Le Sager, P. (2010) 'Study of CO surface pollution in Europe based on observations and nested-grid applications of GEOS-CHEM global chemical transport model.', Tellus B, 62, 209–227.
 39. Grimmond C.S.B., M. Blackett, M. Best, J. Barlow, J.-J. Baik, S. Belcher, S. Bohnenstengel, I. Calmet, F. Chen, A. Dandou, K. Fortuniak, M. Gouvea, R. Hamdi, M. Hendry, H. Kondo, E.S. Krayenhoff, S.H. Lee, T. Loricán, A. Martilli, S. Miao, K. Oleson, G. Pigeon, A. Porson, F. Salamanca, L. Shashua-Bar, G.-J. Steeneveld, M. Tombrou, J. Voogt, N. Zhang. (2010) 'The international urban energy balance models comparison project: First results', J. Appl. Meteorol. Climatol. 49, 1268-1292
 40. Grimmond C. S. B., Blackett M., Best M. J., Baik J.-J., Belcher S. E., Beringer J., Bohnenstengel S. I., Calmet I., Chen F., Coutts A., Dandou A., Fortuniak K., Gouvea M. L., Hamdi R., Hendry M., Kanda M., Kawai T., Kawamoto Y., Kondo H., Krayenhoff E. F., Lee S.-H., Loricán T., Martilli A., Masson V., Miao S., Oleson K., Ooka R., Pigeon G., Porson A., Ryu Y.-H., Salamanca F., Steeneveld G. J., Tombrou M., Voogt J. A., Young D., Zhang N. (2011) 'Initial results from Phase 2 of the International Urban Energy Balance Models Comparison Project', International Journal of Climatology 31(2), 244-272
 41. Varotsos, K. V., C. Giannakopoulos, and M. Tombrou (2011) 'Estimating future air-quality due to climate change: the Athens case study', Adv. Sci. Res., 6, 117–121.
 42. Helmis C.G., Sgouros G., Tombrou M., Schäfer K., Münkel C., Bossioli E., Dandou A., (2012) 'A comparative study and evaluation of Mixing Height estimation based on SODARRASS, ceilometer data and model simulations, Boundary-Layer Meteorol., 145(3), 507–526.
 43. Bossioli E., Tombrou M., Karali A., Dandou A., Paronis D., Sofiev M., (2012) Ozone production from the interaction of wildfire and biogenic emissions: a case study in Russia during spring 2006, Atmos. Chem. Phys., 12, 7931-7953.
 44. Papangelis G., Tombrou M., Dandou A., Kontos T. (2012) 'An urban "green planning" approach utilizing the Weather Research and Forecasting (WRF) modeling system. A case study of Athens, Greece', Landscape and Urban Planning, 105, 174-183.
 45. Bossioli, E., Tombrou, M., Helmis, C., Kurtenbach, R., Wiesen, P., Schäfer, K., Dandou, A., Varotsos, K.V. (2013) 'Issues related to aircraft take-off plumes in a mesoscale photochemical model', Sci Total Environ., 456-457, 69-81.
 46. Protonotariou A.P., Kostopoulou E., Tombrou M., Giannakopoulos C. (2013) 'European CO budget and links with synoptic circulation based on GEOS-CHEM model simulations', Tellus B, 65.

47. Varotsos, K. V., M. Tombrou, and C. Giannakopoulos (2013) 'Statistical estimations of the number of future ozone exceedances due to climate change in Europe', *J. Geophys. Res.-Atmos.*, 118, 6080-6099.
48. Varotsos, K. V., C. Giannakopoulos, and M. Tombrou (2013) 'Assessment of the impacts of Climate Change on European ozone levels', *Water, Air, & Soil Pollution*, 224:1596.
49. Bezantakos S., Barmounis K., Giamarelou M., Bossioli E., Tombrou M., Mihalopoulos N., Eleftheriadis K., Kalogiros J., Allan J.D., Bacak A., Percival C., Coe H., and Biskos G. (2013) Chemical Composition and Hygroscopic Properties of Aerosol Particles over the Aegean Sea, *Atmos. Chem. Phys.*, 13, 11595-11608,
50. Tombrou M., E. Bossioli, J. Kalogiros, J. Allan, A. Bacak, G. Biskos, H. Coe, A. Dandou, G. Kouvarakis, N. Mihalopoulos, C. J. Percival, A. P. Protonotariou, B. Szabó-Takács (2015) 'Physical and chemical processes of air masses in the Aegean Sea during Etesians: Aegean-Game airborne campaign', *Sci. Total Environ.*, 506-507, 201-216
51. Athanasopoulou E., A. Protonotariou, E. Bossioli, A. Dandou, M. Tombrou M, J. Allan, H. Coe, N. Mihalopoulos, J. Kalogiros, A. Bacak, J. Sciare, G. Biskos (2015) 'Aerosol chemistry above an extended Archipelago of the Eastern Mediterranean basin during strong northern winds', *Atmos. Chem. Phys.*, 15(6): 9355-9403
52. Colette A., C. Andersson, A. Baklanov, B. Bessagnet, J. Brandt, J. H. Christensen, R. Doherty, M. Engardt, C. Geels, C. Giannakopoulos, G. B. Hedegaard, E. Katragkou, J. Langner, H. Lei, A. M. M. Manders, D. Melas, F. Meleux, L. Rouil, M. Sofiev, J. Soares, D. S. Stevenson, M. Tombrou, K. V. Varotsos, P. J. Young, (2015) 'Is the ozone climate penalty robust in Europe?', *Environmental Research Letters*, 10(8)
53. Triantafyllou E., M. Giamarelou, E. Bossioli, P. Zarnpas, C. Theodosi, C. Matsoukas, M. Tombrou, N. Mihalopoulos, G. Biskos, (2016) 'Particulate pollution transport episodes from Eurasia to a remote region of northeast Mediterranean', *Atmos. Environ.*, 128, 45–52
54. Athanasopoulou E., A. Protonotariou, G. Papangelis, M. Tombrou, N. Mihalopoulos, E. Gerasopoulos, (2016) 'Long-range transport of Saharan dust and chemical transformations over the Eastern Mediterranean', *Atmos. Environ.* 140, 592–604
55. Bossioli E., M. Tombrou, J. Kalogiros, J. Allan, A. Bacak, S. Bezantakos, G. Biskos, H. Coe, B.T. Jones, G. Kouvarakis, N. Mihalopoulos, C.J. Percival (2016) 'Atmospheric composition in the Eastern Mediterranean: Influence of biomass burning during summertime using the WRF-Chem model', *Atmos. Environ.*, 132, 317-331
56. Kalkavouras P., E. Bossioli, S. Bezantakos, A. Bougiatioti, N. Kalivitis, I. Stavroulas, G. Kouvarakis, A. P. Protonotariou, A. Dandou, G. Biskos, N. Mihalopoulos, A. Nenes and M. Tombrou (2017) 'New particle formation in the southern Aegean Sea during the Etesians: importance for CCN production and cloud droplet number', *Atmos. Chem. Phys.*, 17, 175-192
57. Dandou A., Tombrou M., Kalogiros J., Bossioli E., Biskos G., Mihalopoulos N., Coe H., (2017) 'Investigation of Turbulence Parameterization schemes in the Atmospheric Boundary Layer over Aegean Sea during Etesian winds', *Boundary-Layer Meteorol.*, 164(2), 303–329
58. Sotiropoulou G., Bossioli E., Tombrou M., (2019): 'Modeling Extreme Warm-Air Advection in the Arctic: The Role of Microphysical Treatment of Cloud Droplet Concentration', *Journal of Geophysical Research- Atmospheres*, 124(6), pp. 3492-3519
59. Nakoudi K., Giannakaki E., Dandou A., Tombrou M., Komppula M., 2019: 'Planetary boundary layer height by means of lidar and numerical simulations over New Delhi, India', *Atm. Meas. Tech.* 12 (5), 2595-2610
60. Varotsos K. V., Giannakopoulos C and M. Tombrou (2019): 'What can be learned from the ozone-temperature relationship in Europe during the 2003 and 2014 heatwave episodes', *Regional Environmental Change*, 19(6), pp. 1653-1665
61. Kalkavouras, P., Bougiatioti, A., Kalivitis, N., Stavroulas I., Tombrou M., Nenes, A., Mihalopoulos, N. (2019): 'Regional new particle formation as modulators of cloud condensation nuclei and cloud droplet number in the eastern Mediterranean', *Atmos. Chem. Phys.*, 9(9), pp. 6185-6203
62. Papangelis G., Tombrou M., Kalogiros J., 2019: ' Investigating the effects of surface heterogeneity on the Saharan convective boundary layer using large eddy simulation', *Atmospheric Research*, under review

63. Methymaki G., Bossioli E., Kalogiros J., Kouvarakis G., Mihalopoulos N., Nenes A., and Tombrou M., 2019: 'Direct aerosol absorption at the Eastern Mediterranean', Atmospheric Environment, under review.

Presentations to International Conferences: > 100 (not listed)

Other Publications

- Moussiopoulos N., Berge E., Bohler T., de Leeuw F., Gronskai K., Mylona S. and Tombrou M., (1996), "Ambient air quality, pollutant dispersion and transport models", Topic Report 19, European Environment Agency, Copenhagen, Denmark, (ISBN 92-9167-028-6).
- de Leeuw F., Berge E., Gronskai K. and Tombrou M., (1996), "Review on requirements for models and model applications", EEA-ETC/AQ Report, European Environment Agency, Copenhagen, Denmark, (ISBN 92-9167-027-8).
- Gronskai K., Berge E., Larssen S., de Leeuw F. and Tombrou M., (1997), "Selection of models and input data for groups of applications", Draft EEA-ETC/AQ Report, European Environment Agency, Copenhagen, Denmark.
- Van Aalst R., Edwards L., Pulles T., de Saeger E., Tombrou M., Tønnesen D., (1997), "Guidance Report on Preliminary Assessment under EC Air Quality Directives", EEA-ETC/AQ Report, European Environment Agency, Copenhagen, Denmark.
- Beck J. P., Krzyzanowski M., Koffi B., Hjellbrekke A.-G., Hootsen H., Millan M. Millan, Tombrou M. and Simpson D. (1999), "Tropospheric Ozone in the European Union. The consolidated report", European Environment Agency, European Commission. Office for official publications of the European Communities, (ISBN 92-828-5672-0).
- Ad hoc Working Group on Ozone Directive and Reduction Strategy Development, (1999), "Ozone position paper", European Commission. Office for official publications of the European Communities, (ISBN 92-828-7865-1).
- Baklanov A., J. Burzynski, A. Christen M. Deserti, K. De Ridder, S. Emeis, J. Joffre, A. Karppinen, P. Mestayer, D. Middleton, Martin Piringer and M. Tombrou (Lead authors). K. Baumann-Stanzer, G. Bonafé, A. Dandou, S. Dupont, N. Ellis, S. Grimmond, E. Guilloteau, A. Martilli, V. Masson, T. Oke, V. Prior, M. Rotach and R. Vogt (Contributions) (2005) 'The Urban surface energy budget and mixing height in European cities: data, models and challenges for urban meteorology and air quality', Final report of WG2 COST-715 Action. Piringer M., Joffre S. (Eds), p. 239, (ISBN 954-9526-29-1).
- Baklanov, S.M. Joffre, M. Piringer, M. Deserti, D.R Middleton, M. Tombrou, A. Karppinen, S. Emeis, V. Prior, M. W. Rotach, G. Bonafè, K. Baumann-Stanzer, A. Kuchin, (2006), 'Towards estimating the mixing height in urban areas, Recent experimental and modelling results from the COST-715 Action and FUMAPEX project', Scientific Report 06-06, Danish Meteorological Institute, (ISBN: 87-7478-540-0)
- Zilitinkevich S. S., J. C. R. Hunt, A. A. Grachev, I. N. Esau, D. P. Lalas, E. Akylas, M. Tombrou, C. W. Fairall, H. J. S. Fernando, A. Baklanov and S. M. Joffre, (2007), Atmospheric convection over complex terrain and urban canopy: Non-local ventilation mechanisms and application to pollution-dispersion and air-quality problems', Book Chapter NATO Security through Science Series, Air, Water and Soil Quality Modelling for Risk and Impact Assessment, Editors: A. Ebel, T. Davitashvili
- Tombrou M., Bossioli E. (2008). Integrated modelling at the National and Kapodistrian University of Athens, in Overview of Existing Integrated (off-line and on-line) Mesoscale Meteorological and Chemical Transport Modelling Systems in Europe, Joint Report of COST Action 728 and GURME, GAW Report No. 177, (ISBN 978-1-905313-65-3).
- Bossioli E., Tombrou-Tzella M. (2008), Photochemical Simulations over the Greater Athens Area, Overview of Tools and Methods for Meteorological and Air Pollution Mesoscale Model Evaluation and User Training, Joint Report of COST Action 728 and GURME, GAW Report No. 181, (ISBN 978-1-905313-59-4)
- Grimmond C.S.B., M. Best, J. Barlow, A.J. Arnfield, J-J Baik, A. Baklanov, S. Belcher, M. Bruse, I. Calmet, F. Chen, P. Clark, A. Dandou, E. Erell, K. Fortuniak, R. Hamdi, M. Kanda, T. Kawai, H. Kondo, S. Krayenhoff, S.H. Lee, S-B Limor, A. Martilli, V. Masson, S. Miao, G. Mills, R. Moriwaki, K. Oleson, A. Porson, U. Sievers, M. Tombrou, J. Voogt, T. Williamson, 2009: Urban surface energy

balance models: model characteristics and methodology for a comparison study. *Meteorological and Air Quality Models for Urban Areas*, pp 97-123, Springer, Berlin, Heidelberg. ISBN: 978-364200297-7

- Varotsos, K. V., C. Giannakopoulos, and M. Tombrou (2011), Estimating future air-quality due to climate change: The Athens case study, *Adv. Sci. Res.*, 6, 117–121, doi:10.5194/asr-6-117-2011
- Tombrou M., Bossioli E., Kalogiros J., Biskos G., Coe H., Dandou A., Mihalopoulos N., Kouvarakis G., Protonotariou A.P. and Triantafyllou E., 2013: 'Physical and chemical processes of polluted air masses during Etesians: Aegean-Game airborne campaign - An outline', in 11th International Conference on Meteorology, Climatology and Atmospheric Physics (COMECAP 2012), In book: *Advances in Meteorology, Climatology and Atmospheric Physics*, DOI: 10.1007/978-3-642-29172-2_173
- Protonotariou A.P., Bossioli E., Tombrou M., Mihalopoulos N., Biskos G., Kouvarakis G. and Amiridis V., Air pollution in Eastern Mediterranean: nested-grid GEOS-CHEM model results and airborne observations, in 11th International Conference on Meteorology, Climatology and Atmospheric Physics (COMECAP 2012), *Advances in Meteorology, Climatology and Atmospheric Physics*, Eds. Costas G. Helmis, Panagiotis T. Nastos, Publisher: Springer Berlin Heidelberg, ISBN: 978-3-642-29172-2, Subject: Earth and Environmental Science, 1203- 1209, <http://dx.doi.org/10.1007/978-3-642-29172-2-168>, Doi:10.1007/978-3-642-29172-2-168.
- Bossioli E., Tombrou M., Kalogiros J., Allan J., Bacak A., Bezantakos S., Biskos G., Coe H., Jones B.T., Kouvarakis G., Mihalopoulos N., and Percival C.J., 2014: 'Simulation of physical and chemical processes of polluted air masses during the Aegean-Game airborne campaign using WRF-Chem model', 12th International Conference on Meteorology Climatology and Atmospheric Physics, COMECAP 2014 e-book of proceedings, ISBN: 978-960-524-430-9, vol. 1, 155-159
- Athanasopoulou E., A. Protonotariou, E. Bossioli, J. Allan, A. Dandou, H. Coe, A. Bacak, J. Kalogiros, N. Mihalopoulos, G. Biskos, M. Tombrou, 2014: 'Spatial distribution of aerosol species over the Aegean Sea: model coupling and evaluation during a recent Etesian period', 12th International Conference on Meteorology Climatology and Atmospheric Physics, COMECAP 2014 e-book of proceedings, Eds. M. Kanakidou N. Mihalopoulos and P. Nastos; ISBN: 978-960-524-430-9, Vol 1 Pages 78-84, 2014.
- Dandou A., M. Tombrou, J. Kalogiros, E. Bossioli, S. Bezantakos, G. Biskos, G. Kouvarakis, N. Mihalopoulos, J. Allan, H. Coe, 2014: 'Simulation of Marine Boundary Layer Evolution in the Aegean Sea during Etesians', 12th International Conference on Meteorology Climatology and Atmospheric Physics, COMECAP 2014 e-book of proceedings, Eds. M. Kanakidou N. Mihalopoulos and P. Nastos, ISBN: 978-960-524-430-9, vol 1, 220-224
- Marinou E, A. Dandou, M. Tombrou, V. Amiridis, 2014: 'Comparison of mixing layer heights derived from CALIPSO and WRF model simulations', 12th International Conference on Meteorology Climatology and Atmospheric Physics, COMECAP 2014 e-book of proceedings, Eds. M. Kanakidou N. Mihalopoulos and P. Nastos, ISBN: 978-960-524-430-9
- Kalkavouras P, S. Bezantakos, E. Bossioli, I. Stavroulas, G. Kouvarakis, A. P. Protonotariou, A. Dandou, G. Biskos, N. Mihalopoulos, M. Tombrou, 2014: 'Simultaneous gas and aerosol measurements at Santorini and Finokalia during Etesians', 12th International Conference on Meteorology Climatology and Atmospheric Physics, Heraklion, COMECAP 2014 e-book of proceedings, Eds. M. Kanakidou N. Mihalopoulos and P. Nastos, ISBN: 978-960-524-430-9
- Methimaki G., E. Bossioli, A. Dandou, J. Kalogiros, G. Biskos, N. Mihalopoulos, M. Tombrou, 2016: 'Solar irradiance prediction over the Aegean Sea: Shortwave parameterization schemes and aerosol radiation feedback', *Air Pollution Modeling and its Application XXV*, Eds Clemens Mensink, George Kallos, published by Springer ISBN: 9783319576459
- Kalkavouras P., E. Bossioli, G. Biskos, N. Mihalopoulos, A. Nenes, M. Tombrou, 2017: 'Impact of Chemical Composition on NPF, CCN and Droplet Formation at South Aegean Sea During Summertime Etesians', COMECAP 2016, Thessaloniki In: Karacostas T., Bais A., Nastos P. (eds) *Perspectives on Atmospheric Sciences*. Springer Atmospheric Sciences. Springer, Cham, 1, 416-421
- Papangelis G., Tombrou M., Kalogiros J., 2017: 'The Effect of Surface Heterogeneity on the Vertical Structure of the Saharan Convective Boundary Layer', COMECAP 2016, Thessaloniki, In: Karacostas T., Bais A., Nastos P. (eds) *Perspectives on Atmospheric Sciences*. Springer Atmospheric Sciences. Springer, Cham.

Teaching activities (in the Departments of Physics and Mathematics of NKUA)

Under/Grad Fluid Dynamics, Meteorology, Atmospheric Boundary Layer Physics
Graduate Geophysical Fluid Dynamics/ Atmospheric Boundary Layer Physics/ Numerical
Methods/ Data Analysis Methods/ Atmospheric Physics and Chemistry, Cloud
Physics

Advisor to: 11 PhD (8 graduated, 3 current) students, 4 Postdoctoral students
Participation in about 100 International Conference

Reviewer: Atmospheric Environment/ Journal of Applied Meteorology and Climatology/
Boundary Layer Meteorology/ Copernicus/ Environmental Science and Technology/ Quarterly
Journal of the Royal Meteorological Society/ Meteorology and Atmospheric Physics/ Journal of
the Air and Waste Management Association/ Journal of the International Solar Energy Society/
Journal of Applied Meteorology and Climatology/ Journal of Climate Dynamics/Atmospheric
Chemistry and Physics

Other Activities

- National representative COST 715 'Meteorology Applied to Urban Pollution Problems'
(1998- 2004)
- National representative COST 728 'Enhancing Meso - Scale Meteorological Modelling
Capabilities for Air Pollution Dispersion applications', (2004-2009)