

CURRICULUM VITAE

PERSONAL INFORMATION

Guerova, Guergana

Age: 51

Nationality: Bulgarian

Web: <http://suada.phys.uni-sofia.bg/>

A. EDUCATION

- 2003 PhD applied physics
Faculty of Science/University of Bern, Bern, Switzerland
- 1995 MSc meteorology
Physics Faculty/Sofia University "St. Kliment Ohridski", Sofia, Bulgaria

B. CURRENT POSITION

- 2013 - present Associate professor
Physics Faculty/Sofia University "St. Kliment Ohridski", Sofia, Bulgaria
- 2022 - present Head Department "Meteorology and geophysics"
Physics Faculty/Sofia University "St. Kliment Ohridski", Sofia, Bulgaria

C. PREVIOUS POSITIONS AND FELLOWSHIPS

- 2013 - 2017 Vice chair
COST Action ES1206 "Advanced Global Navigation Satellite Systems tropospheric products for monitoring severe weather events and climate" (GNSS4SWEC)
- 2011 - 2014 Marie Curie IRG fellow
Physics Faculty/Sofia University "St. Kliment Ohridski", Bulgaria
- 2006 - 2009 Post doctoral fellow
Centre for atmospheric chemistry/University of Wollongong, Wollongong, Australia
- 2004 - 2006 Post doctoral fellow
Laboratoire de Modélisation de la Chimie Atmosphérique/Swiss Federal Institute of Technology, Lausanne, Switzerland
- 1995 - 1998 Research scientist
Geophysical Institute/Bulgarian Academy of Science, Sofia, Bulgaria

D. AWARDS

- 2014 1st place award
Marie Curie Alumni Association video competition "GNSS Meteorology: Explained"
- 2014 Outstanding reviewer award
Advances in Space Research journal

E. SUPERVISION OF STUDENTS

2011 - present 6 PhD and 22 MSc/BSc students
Physics Faculty/Sofia University "St. Kliment Ohridski", Bulgaria

F. TEACHING ACTIVITIES

2011 - present BSc courses: Introduction in meteorology, Synoptic meteorology
MSc course: Satellite image interpretation, Aviation meteorology,
Physics of climate - part 2

G. ORGANISATION OF SCIENTIFIC MEETINGS

2022 8th International Colloquium Scientific and Fundamental Aspects of GNSS
scientific program committee and local organisation

2014 1st GNSS4SWEC summer school, Bulgaria
program development and local organisation

2008 ARCNESS winter school, Australia
initiated and lead the organisation of the school including interactive session
on the Australian super-computer and secured financial support (€ 11 000)

H. INSTITUTIONAL RESPONSIBILITIES

2014 - 2015 MSc degree coordinator

2017 - present Sofia University "St. Kliment Ohridski", Bulgaria

I. MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2011 - present Associate member of the International GNSS Service (IGS)

2011 - present Member of IGS Troposphere Working Group

2012 - 2016 Member of International Association of Geodesy Working Group 4.3.3
"Integration of GNSS atmospheric models with NWP"

2006 - 2008 Member and section secretary, Australian Meteorological and
Oceanographic Society AMOS, Australia

J. JOURNAL REVIEWER

Journal reviews: 1) Advances in Space Research, 2) Annales Geophysicae, 3) Arabian Journal for Science & Engineering, 4) Atmospheric Environment, 5) Atmospheric Measurements Technique, 6) Atmospheric Research, 7) GPS Solutions, 8) International Journal of Climatology, 9) Journal of Applied Meteorology and Climatology, 10) Journal of Atmospheric and Solar-Terrestrial Physics, 11) EEE Transactions on Geoscience and Remote Sensing, 12) Journal of Geophysical Research, 13) Journal of Geodesy, 14) Physics & Chemistry of the Earth, 15) Remote sensing, 16) Solar Energy.

L. PUBLICATIONS - PEER REVIEW

- Guerova, G.**, Douša, J., Dimitrova, T., Stoycheva, A., Václavovic, P. and Penov, N., 2022. GNSS storm nowcasting demonstrator for Bulgaria. *Remote Sensing*, doi:10.3390/rs14153746 14, 15, 3746.
- Penov N., A. Stoycheva and **G. Guerova**. Fog climatology and stability index for Plovdiv 1991-2018. *Proceedings of the Bulgarian Academy of Sciences*, 75, 8, 1156-1164, 2022.
- Stoev K., P. Post and **G. Guerova**, 2022. Synoptic circulation patterns associated with foehn days in Sofia: 1979-2014, *Idojaras*, accepted 2021.
- Lasota, E., M. Slavchev, **G. Guerova**, W. Rohm, and J. Kaplon, 2022. Combined space- and ground-based GNSS monitoring of two severe hailstorm cases in Bulgaria. *Journal of Atmospheric and Oceanic Technology*, doi:10.1175/JTECH-D-21-0100.1, 39, 5, 649–665.
- Slavchev M., T. Simeonov, K. Vassileva and **G. Guerova**, 2022. Measurement and Modelling with GNSS and NWP (WRF) over Northwest Bulgaria, *Proceedings of the Bulgarian Academy of Sciences*, 75, 6.
- Mircheva B., M. Tsekov, U. Meyer and **G. Guerova**, 2020. Analysis of the 2014 Wet Extreme in Bulgaria: Anomalies of Temperature, Precipitation and Terrestrial Water Storage. *Hydrology*, 7(3), 66, <https://doi.org/10.3390/hydrology7030066>.
- Łoś M., K. Smolak, **G. Guerova** and W. Rohm, 2020. GNSS-Based Machine Learning Storm Nowcasting. *Remote Sens.*, 12(16), 2536, <https://doi.org/10.3390/rs12162536>.
- Guerova G.**, T. Dimitrova, K. Vassileva, M. Slavchev, K. Stoev, S. Georgiev, 2020. BalkanMed real time severe weather service: progress and prospects in Bulgaria. *Advances Space Research*, 66/12, 2844-2853. <https://doi.org/10.1016/j.asr.2020.07.005>.
- Lasota E., W. Rhom, **G. Guerova** and C-Y. Liu, 2020. A Comparison Between Raytraced GFS/WRF/ERA and GNSS Slant Path Delays in Tropical Cyclone Meranti. *IEEE Transactions on Geoscience and Remote Sensing*, 58, 1, 421-435, 10.1109/TGRS.2019.2936785.
- Stoev K. and **G. Guerova**, 2020. Foehn classification and climatology in Sofia for 1975-2014. *Idojaras*, 124/4, 483–497.
- Guerova G.**, Tz. Dimitrova and S. Georgiev, 2019. Thunderstorm Classification Functions Based on Instability Indices and GNSS IWV for the Sofia Plain. *Remote sensing*, 11/24, 2988, <https://doi.org/10.3390/rs11242988>.
- Mircheva B., M. Tsekov, U. Meyer and **G. Guerova**, 2017. Anomalies of hydrological cycle components during the 2007 heat wave in Bulgaria, *Journal of Atmospheric and Solar-Terrestrial Physics*, 165-166, 1-9, 10.1016/j.jastp.2017.10.005.
- Stoycheva A., I. Manafov, K. Vassileva and **G. Guerova**, 2017. Study of persistent fog in Bulgaria with Sofi a Stability Index, GNSS tropospheric products and WRF simulations. *Journal of Atmospheric and Solar-Terrestrial Physics*, 161, 160-169, doi:10.1016/j.jastp.2017.06.011.
- Guerova G.**, J. Jonas, J. Dousa, G. Dick, S. de Haan, E. Pottiaux, O. Bock, R. Pacione, G. Elgered, H. Vedel, and M. Bender, 2016. Review of the state of the art and future prospects of the ground-based GNSS meteorology in Europe. *Atmos. Meas. Tech.*, 9, 5385-5406, 2016, 10.5194/amt-9-5385-2016.
- Manafov I. and **G. Guerova**, 2016. Assimilation experiments with WRF model of fog case at Sofia airport. *Annuaire de l'Universite de Sofia "St. Kliment Ohridski", Faculte de Physique*, 109.
- Stoycheva A. and **G. Guerova**, 2015. Study of fog in Bulgaria by using the GNSS tropospheric products and large scale dynamic analysis. *Journal of Atmospheric and Solar-Terrestrial Physics*, 133, 87-97, doi:10.1016/j.jastp.2015.08.004.

- Manafov I. and **G. Guerova**, 2015. Numerical simulations of 18 fog case studies at Sofia airport in the period 2011-2014. *Annuaire de l'Universite de Sofia "St. Kliment Ohridski", Faculte de Physique*, 108, 48-61.
- Penov N., D. Pancheva, P. Mukhtarov and **G. Guerova**, 2015. Ionospheric response to sudden stratospheric warming in January 2009 recorded by ionosonde measurements. *Proceedings of the Bulgarian Academy of Sciences*, 68, 2, 241-250.
- Guerova G.**, Tzv. Simeonov and N. Yordanova, 2014. The Sofia University Atmospheric Data Archive (SUADA), *Atmos. Meas. Tech.*, 7, 2683-2694, doi:10.5194/amt-7-2683-2014.
- Guerova G.**, 2014. Water vapor anomaly during the 2003 European summer. *Annuaire de l'Universite de Sofia "St. Kliment Ohridski", Faculte de Physique*, 107, 58-67.
- Simeonov Tzv., K. Vasileva and **G. Guerova**, 2013. Application of ground-based GNSS meteorology in Bulgaria/Southeast Europe: case study 2007 heat wave. *Annuaire de l'Universite de Sofia "St. Kliment Ohridski", Faculte de Physique*, 106, 88-100.
- Guerova G.**, and N. Jones, 2009. 2003 megafires in Australia: impact on tropospheric ozone & aerosols. *Atmos. Chem. Phys. Discuss.*, 9, 3007-3040, doi:10.5194/acpd-9-3007-2009.
- Guerova G.**, and N. Jones, 2007. A global model study of ozone enhancement during the August 2003 heat wave in Europe. *Environm. Chem.*, 4, 285-292, doi:10.1071/EN07027.
- Guerova G.**, I. Bey, J.-L. Attie, R. V. Martin, J. Cui and M. Sprenger, 2006. Impact of transatlantic transport episodes on summertime ozone in Europe. *Atmos. Chem. Phys.*, 6, 2057-2072.
- Guerova G.**, Bettems J.-M., Brockmann E., and Ch. Matzler, 2006. Assimilation of COST 716 Near Real Time GPS data in the non hydrostatic limited area model used at MeteoSwiss. *Meteorol. Atmos. Phys.*, 91, 1-4, 149-164, doi:10.1007/s00703-005-0110-6.
- Guerova G.**, E. Brockmann, F. Schubiger, J. Morland and Ch. Matzler, 2005. An integrated assessment of measured and modeled IWV in Switzerland for the period 2001-2003. *J. Appl. Meteorol.*, 44, 7, 1033-1044.
- Guerova G.**, J.-M. Bettems, E. Brockmann, and Ch. Matzler, 2004. Assimilation of the GPS-derived Integrated Water Vapour (IWV) in the MeteoSwiss Numerical Weather Prediction model - a first experiment. *Phys. Chem. Earth.*, 29, 2-3, 177-186.
- Guerova G.**, E. Brockmann, J. Quiby, F. Schubiger, and Ch. Matzler, 2003. Validation of NWP mesoscale models with Swiss GPS Network AGNES. *J. Appl. Meteorol.*, 42, 1, 141-150.
- Mitzeva R., and **G. Guerova**, 2000. Numerical study of heat and moisture exchange in the morning boundary layer. *Idojaras*, 104, 2, 109-122.
- Mitzeva R., and **G. Gerova**, 1997. Numerical study of cloud microphysics with three one-dimensional dynamic approach. *Bulgarian Geophysical Journal*, 3-4, 5-14.