

Presentations

Invited Presentations

- Steiner, A.K.** and the SPARC ATC Activity, SPARC Activity on Atmospheric Temperature Changes and their Drivers (ATC), *ISSI Team Meeting on Middle Atmosphere Dynamics*, Bern, Switzerland, March 2019.
- Steiner, A. K.**, F. Ladstädter, and the SPARC ATC Activity (invited), Atmospheric temperature trends from observations – an update, *AGU Fall Meeting 2018*, Washington, D.C., USA, December 2018.
- Steiner, A. K.**, Detection and attribution: trends and extremes (Part II of: Climate change, impacts and attribution of anthropogenic causes: status and challenges by Kirchengast G., A.K. Steiner, D.Maraun), *Climate Change, Responsibility and Liability International Conference*, Graz, November 2018.
- Steiner A. K.**, Klimavariabilität und Trends in der Atmosphäre, Sitzung 12/18 der Kommission Klima und Luftqualität der Österreichischen Akademie der Wissenschaften, Wien, Austria, October 2018.
- Steiner A. K.**, F. Ladstädter, and H. Wilhelmssen, Temperature trends and climate variability from GPS RO, radiosondes, and AMSU, *ICGPSRO 2018 – 4th International Conference on GPS Radio Occultation and 11th FORMOSAT-3/COSMIC Data Users' Workshop*, Taipei, Taiwan, April 2018.
- Foelsche* U., G. Kirchengast, J. Danzer, M. Schwärz, **A. K. Steiner**, V. Proschek, B. Angerer, F. Ladstädter, and J.Innerkofler, Studying atmosphere and climate with GNSS RO data: recent results from the Wegener Center, Graz, Austria, *ICGPSRO 2018 – 4th International Conference on GPS Radio Occultation and 11th FORMOSAT-3/COSMIC Data Users' Workshop*, Taipeh, Taiwan, April 2018 (*presenter).
- Kirchengast*, G., and **A. K. Steiner**, GNSS radio occultation for climate science: where do we stand and what are key next steps?, *SGCS17 - IAG Workshop on Satellite Geodesy for Climate Studies*, Bonn, Germany, September 2017 (*presenter).
- Steiner, A. K.** and the ARSCLiSys group, Atmospheric Climate Monitoring with GNSS Radio Occultation, *14th Annual Meeting Asia Oceania Geosciences Society – AOGS 2017*, Singapore, August 2017.
- Steiner, A. K.** and the ARSCLiSys group, Recent advances in climate monitoring with GNSS radio occultation capturing atmospheric variability and trends, GC41A-1069, *American Geophysical Union (AGU) Fall Meeting 2016*, San Francisco, CA, USA, December 2016.
- Kirchengast*, G., and **A. K. Steiner**, GNSS radio occultation for climate: new results and advances for monitoring variability, trends, and extreme events, *IAG/CPGPS International Conference on GNSS+ (ICG+2016)*, Shanghai, China, July 2016 (*presenter).
- Steiner, A. K.**, Einblicke in unsere Atmosphäre mittels GPS Radio-Okkultation: Klimavariabilität, Trends, und Extremereignisse, *Jahreshauptversammlung der Österreichischen Gesellschaft für Meteorologie, ZAMG*, Wien, Austria, March 2016.
- Steiner, A. K.**, Das Klimasystem und seine Modellierung, *Pro Scientia Sommerakademie 2015*, Celje, Slovenia, September 2015.
- Steiner, A. K.**, B. Scherllin-Pirscher, F. Ladstädter, L. Brunner, M. Schwaerz, R. Biondi, J. Fritzer, J. Schwarz, U. Foelsche, and G. Kirchengast, Observing climate variability and change with GPS radio occultation, *Our Common Future Under Climate Change – CFCC15*, Paris, France, June 2015.
- Steiner, A. K.**, B. Scherllin-Pirscher, F. Ladstädter, R. Biondi, L. Brunner, G. Kirchengast, and the ARSCLiSys group, Atmospheric variability modes and trends in the UTLS from the RO record, *SPARC Stratospheric Temperature Trends Workshop*, Victoria, BC, Canada, April 2015.
- Steiner, A. K.**, B. Scherllin-Pirscher, F. Ladstädter, M. Schwärz, L. Brunner, T. Rieckh, R. Klingler, R. Biondi, J. Fritzer, J. Schwarz, U. Foelsche, and G. Kirchengast, Observing atmospheric variability, extreme events, and climate change from space with GPS radio occultation, *The Climate Symposium 2014*, Darmstadt, Germany, October 2014.
- Steiner, A. K.**, Climate monitoring with GPS RO – Achievements and challenges, *Eighth FORMOSAT-3/COSMIC Data Users' Workshop*, Boulder, CO, USA, September/October 2014.

- Steiner, A. K.**, B. Scherllin-Pirscher, M. Schwärz, F. Ladstädter, T. Rieckh, R. Klingler, U. Foelsche, and G. Kirchengast, Klimamonitoring der Erdatmosphäre mit GPS Radio-Okkultation, *Summer University – Graz in Space 2014*, University of Graz, Graz, Austria, September 2014.
- Steiner, A. K.**, Introduction to atmospheric climate data, *Climate By Ear (Science By Ear 3) Workshop*, Graz, Austria, September 2014.
- Steiner, A. K.**, Status of the RO record with focus on stratospheric trend analysis, *SPARC Stratospheric Temperature Trends Workshop*, Reading, UK, September 2013.
- Steiner, A. K.** (keynote), Climate monitoring and change detection with GPS Radio Occultation, *2nd International Conference on GPS Radio Occultation (ICGPSRO)*, Taipei, Taiwan, May 2013.
- Steiner, A. K.**, B. C. Lackner, F. Ladstädter, B. Scherllin-Pirscher, U. Foelsche, G. C. Hegerl, and G. Kirchengast, Monitoring der globalen Erwärmung mit GPS Satellitensignalen, *Summer University – Graz in Space 2012*, Space Research Institute of the Austrian Academy of Sciences, Graz, Austria, September 2012.
- Kirchengast, G., and **A. K. Steiner***, Monitoring von Treibhausgasen und Klimawandel mit Satelliten, *Summer University – Graz in Space 2012*, Space Research Institute of the Austrian Academy of Sciences, Graz, Austria, September 2012.
- Steiner, A. K.**, GNSS radio occultation – Utility for weather and climate, *First Gfg2 (GNSS for Global Environmental Earth Observation (GEE0) and GEOSS) Consultation Workshop*, Oslo, Norway, October 2011.
- Steiner, A. K.**, GPS radio occultation for climate monitoring and change detection: Error characteristics, uncertainty, applications, *Stratospheric Processes And their Role in Climate (SPARC) Temperature Trend Assessment Meeting*, Paris, France, September 2011.
- Steiner, A. K.**, B. C. Lackner, F. Ladstädter, B. Scherllin-Pirscher, G. C. Hegerl, U. Foelsche, and G. Kirchengast, GPS radio occultation for observing atmosphere and climate, *UCAR/COSMIC Seminar*, Boulder, CO, USA, August 2010.
- Steiner A. K.**, B. C. Lackner, F. Ladstädter, G. Kirchengast, B. Pirscher, G. C. Hegerl, and U. Foelsche, GPS radio occultation for climate applications, *Intl. Beacon Satellite Symposium*, Barcelona, Spain, June 2010.
- Steiner, A. K.** (invited), G. Kirchengast, B. C. Lackner, B. Pirscher, and U. Foelsche, Atmospheric climate change detection based on GPS/Met and CHAMP radio occultation records 1995 to 2007, *Geophysical Research Abstracts*, Vol. 10, EGU2008-A-09177, *European Geosciences Union (EGU) General Assembly 2008*, Vienna, Austria, April 2008.
- Steiner, A. K.**, G. Kirchengast, M. Borsche, and U. Foelsche, A multi-year comparison of lower stratospheric temperatures from CHAMP radio occultation data with MSU/AMSU records, *3rd International Workshop on Occultations for Probing Atmosphere and Climate (OPAC-3)*, Graz, Austria, September 2007.
- Steiner, A. K.**, Climate change monitoring and atmospheric change analysis by radio occultation, *United Nations/Austria/European Space Agency Symposium on “Space Tools and Solutions for Monitoring the Atmosphere in Support of Sustainable Development”*, Graz, Austria, September 2007.
- Steiner, A. K.**, U. Foelsche, A. Gobiet, and G. Kirchengast, Simulation studies on the analysis of radio occultation data, *2nd GRAS SAF User Workshop*, Helsingør, Denmark, June 2003.
- Kirchengast, G., U. Foelsche, and **A. K. Steiner***, Climate monitoring using GNSS occultation, From promises via simulation studies to real monitoring and beyond, *4th Oersted International Science Team Conference (OIST-4)*, Copenhagen, Denmark, September 2002 (*presenter).
- Steiner, A. K.**, G. Kirchengast, U. Foelsche, L. Kornblueh, E. Manzini, and L. Bengtsson, GNSS occultation sounding for climate monitoring, *Geophysical Research Abstracts*, Vol. 2, *25th Gen. Assembly of the Europ. Geophys. Society (EGS)*, Nice, France, April 2000.

Presentations as First or Presenting Author

- Steiner, A. K.**, F. Ladstädter, H. Wilhelmssen, M. Stocker, and P. Peter, Klimavariabilität und Trends in der freien Atmosphäre aus Beobachtungsdaten, *DACH 2019*, Garmisch-Partenkirchen, Germany, March 2019.
- Unterberger, C., L. Brunner, S. Nabernegg, K. W. Steininger, **A. K. Steiner***, E. Stabentheiner, S. Monschein, H. Truhetz (poster), Spring frost risk for regional apple production under a warmer climate, *DACH 2019*, Garmisch-Partenkirchen, Germany, March 2019.
- Steiner, A. K.**, and A. C. Maycock, Atmospheric temperature changes and their drivers - Activity report, 26th *SPARC Scientific Steering Group meeting*, Kyoto, Japan, October 2018.
- Steiner, A. K.**, F. Ladstädter, H. Wilhelmssen, M. Stocker, M. Schwärz, and G. Kirchengast (poster), Advances in GNSS radio occultation for atmospheric climate monitoring, *SPARC General Assembly 2018*, Kyoto, Japan, October 2018.
- Steiner, A. K.**, F. Ladstädter, and H. Wilhelmssen, Temperature trends from atmospheric observations, *SPARC ATC Activity 2nd Workshop on Atmospheric Temperature Changes and their Drivers*, Paris, France, June 2018.
- Maycock, A. C., W. J. Randel, and **A. K. Steiner***, Revisiting the mystery of recent stratospheric temperature trends, *SPARC ATC Activity 2nd Workshop on Atmospheric Temperature Changes and their Drivers*, Paris, France, June 2018 (*presenter).
- Steiner, A. K.**, Attribution of extreme events to human induced climate change, *DK Climate Change Annual Workshop*, Wegener Center, Graz, Austria, June 2018.
- Kirchengast, G., **A. K. Steiner***, and U. Foelsche*, Wegener Center and Earth Observation Research, The George C. Marshall Visit to Austria - 2018 Program "Aerospace Technologies", Wegener Center, Austria, April 2018 (*presenters).
- Steiner, A. K.**, F. Ladstädter, and H. Wilhelmssen (poster), Temperature trends variability in the troposphere and stratosphere from GPS Radio Occultation, *Geophys. Res. Abstracts, Vol. 20, EGU2018-1528, EGU General Assembly 2018*, Vienna, Austria, April 2018.
- Steiner, A. K.**, and A. C. Maycock, Atmospheric temperature changes and their drivers - Activity report, 25th *SPARC Scientific Steering Group meeting*, Incheon, South Korea, October 2017.
- Steiner, A. K.**, F. Ladstädter, H. Wilhelmssen, and G. Kirchengast (poster), Atmospheric variability and trends from the GPS RO record, *7. Österreichischer MeteorologInnentag*, Graz, Austria, November 2017.
- Steiner, A. K.**, M. Mochart, F. Ladstädter, B. Angerer, M. Schwärz, C. Ao, H. Gleisner, D. Hunt, T. Schmidt, A. von Engeln, U. Foelsche, S-P. Ho, G. Kirchengast, Y-H. Kuo, K.B. Lauritsen, A.J. Mannucci, C. Marquardt, W. Schreiner, S. Syndergaard, and J. Wickert, Multi-mission GPS RO observations from different processing centers - consistency and structural uncertainty, *COSMIC-IROWG 2017*, Estes Park, CO, USA, September 2017.
- Steiner, A. K.**, F. Ladstädter, H. Wilhelmssen, B. Angerer, and G. Kirchengast (poster), Atmospheric variability and trends from the GPS RO record, *COSMIC-IROWG 2017*, Estes Park, CO, USA, September 2017.
- Steiner, A. K.**, G. Kirchengast*, and Research Teams, Climate use of GNSS radio occultation data, *RO Science Advisory Group 4th Meeting*, EUMETSAT, Darmstadt, May 2017.
- Steiner, A. K.**, F. Ladstädter, and H. Wilhelmssen (poster), Vertically resolved trends from GPS Radio Occultation and their uncertainties, *Geophys. Res. Abstracts, Vol. 19, EGU2017-9489, EGU General Assembly 2017*, Vienna, Austria, April 2017.
- Ladstädter, F., **A. K. Steiner***, B. Angerer, and H. Wilhelmssen (poster), Vertically resolved trends and imprints of recent record years in the UTLS from GPS RO, A13G-0381, *American Geophysical Union (AGU) Fall Meeting 2016*, San Francisco, CA, USA, December 2016 (*presenter).
- Steiner, A. K.**, B. Scherllin-Pirscher, F. Ladstädter, H. Wilhelmssen, and B. Angerer, Vertically resolved atmospheric trends from the RO record 2001 to 2016, *OPAC-IROWG 2016 International Workshop*, Seggau Castle, Austria, September 2016.

- Steiner, A. K.**, B. Scherllin-Pirscher, F. Ladstädter, R. Klingler, B. Angerer, C. Ao, H. Gleisner, D. Hunt, T. Schmidt, A. von Engel, U. Foelsche, S-P. Ho, G. Kirchengast, Y-H. Kuo, K. B. Lauritsen, A. J. Mannucci, C. Marquardt, W. Schreiner, S. Syndergaard, and J. Wickert, Consistency of multi-satellite RO records from different data centers: First result, *OPAC-IROWG 2016 International Workshop*, Seggau Castle, Austria, September 2016.
- Steiner, A. K.**, B.C. Lackner, M. A. Ringer, and G. Kirchengast, Model evaluation with GPS radio occultation observations in the UTLS, *SPARC ATC Activity Workshop Atmospheric Temperature Changes and their Drivers*, Graz, Austria, April 2016.
- Steiner, A. K.**, A. C. Maycock, and W. Randel, Atmospheric Temperature Changes and their Drivers (ATC) – New Avenues of the Stratospheric Temperature Trends Activity, *SPARC ATC Activity Workshop Atmospheric Temperature Changes and their Drivers*, Graz, Austria, April 2016.
- Steiner, A. K.**, R. Biondi, G. Kirchengast, and T. Rieckh, Characterization of cyclones and volcanic clouds with GPS radio occultation, *3rd International Conference on GPS Radio Occultation (ICGPSRO)*, Taipei, Taiwan, March 2016.
- Steiner, A. K.**, A. C. Maycock, and W. Randel, Atmospheric temperature changes: new avenues of the stratospheric temperature trends activity, *SPARC 23rd Scientific Steering Group meeting*, Boulder, CO, USA, November 2015.
- Steiner, A. K.**, B. Scherllin-Pirscher, F. Ladstädter, M. Schwaerz, R. Biondi, L. Brunner, U. Foelsche, and G. Kirchengast, GPS radio occultation: applications of an emerging reference climate record, *SPARC Regional Workshop on Chemical and Physical Processes in the Climate System*, Boulder, CO, USA, November 2015.
- Steiner, A. K.**, B. Scherllin-Pirscher, F. Ladstädter, L. Brunner, M. Schwaerz, R. Biondi, J. Fritzer, J. Schwarz, U. Foelsche, and G. Kirchengast (poster), Observing climate variability and change with GPS radio occultation, *Our Common Future Under Climate Change – CFCC15*, Paris, France, June 2015.
- Steiner, A. K.**, B. Scherllin-Pirscher*, L. Brunner, M. Schwärz, and G. Kirchengast (poster), Temperature trends in the upper troposphere to lower stratosphere from radio occultation climate records 2002 to 2012, *5th SPARC General Assembly*, Queenstown, New Zealand, January 2014.
- Steiner, A. K.**, B. Scherllin-Pirscher, L. Brunner, M. Schwärz, and G. Kirchengast* (poster), Temperature trends in the upper troposphere to lower stratosphere from radio occultation climate records 2002 to 2012, *AGU Fall Meeting*, San Francisco, CA, USA, December 2013.
- Steiner, A. K.**, J. Schwarz, M. A. Ringer, and G. Kirchengast, Evaluation of climate models with radio occultation observations, *OPAC-IROWG 2013 International Workshop*, Seggau Castle, Austria, September 2013.
- Steiner, A. K.**, B. C. Lackner, M. Schwärz, M. A. Ringer, and G. Kirchengast (poster), Evaluation of climate models using radio occultation observations – Tropical convection regimes in the HadGEM model, *4th WGNE Workshop on systematic errors in weather and climate models*, Exeter, UK, April 2013.
- Steiner, A. K.**, Beobachtung von Klimaänderungen mittels GPS Radio-Okkultation, *Habilitationskolloquium*, University of Graz, Graz, Austria, January 2013.
- Steiner, A. K.**, D. Hunt, S-P. Ho, G. Kirchengast, A. J. Mannucci, B. Scherllin-Pirscher, H. Gleisner, A. von Engel, T. Schmidt, C. Ao, S. S. Leroy, E. R. Kursinski, U. Foelsche, M. Gorbunov, S. Heise, Y-H. Kuo, K. B. Lauritsen, C. Marquardt, C. Rocken, W. Schreiner, S. Sokolovskiy, S. Syndergaard, and J. Wickert, Assessing structural uncertainty in climate data records from GPS radio occultation, *Geophysical Research Abstracts*, Vol. 14, EGU2012-9319-1, *European Geosciences Union (EGU) General Assembly 2012*, Vienna, Austria, April 2012.
- Steiner, A. K.**, B. C. Lackner, M. Schwärz, M. A. Ringer, and G. Kirchengast, Evaluation of climate models using radio occultation observations – Tropical convection regimes in the HadGEM model, *Int'l Radio Occultation Working Group 2nd Workshop (IROWG2)*, Estes Park, CO, USA, March 28 to April 3, 2012.
- Steiner, A. K.**, D. Hunt, S-P. Ho, G. Kirchengast, A. J. Mannucci, B. Scherllin-Pirscher, H. Gleisner, A. von Engel, T. Schmidt, C. Ao, S. S. Leroy, E. R. Kursinski, U. Foelsche, M. Gorbunov, Y-H. Kuo, K. B. Lauritsen, C. Marquardt, C. Rocken, W. Schreiner, S. Sokolovskiy, S. Syndergaard, S. Heise, and J. Wickert, Quantification of structural uncertainty in climate data records from GPS radio occultation, *Int'l Radio Occultation Working Group 2nd Workshop (IROWG2)*, Estes Park, CO, USA, March 28 to April 3, 2012.
- Steiner, A. K.**, D. Hunt, S-P. Ho, G. Kirchengast, A. J. Mannucci, B. Scherllin-Pirscher, H. Gleisner, A. von Engel, T. Schmidt, C. Ao, S. S. Leroy, U. Foelsche, Y-H. Kuo, E. R. Kursinski, K. B. Lauritsen, S. Syndergaard, M. Gorbunov,

- C. Marquardt, C. Rocken, W. Schreiner, S. Sokolovskiy, and J. Wickert (poster), Towards Earth system data records from GPS radio occultation: Assessing structural uncertainty, Abstract IN21A-1406, *American Geophysical Union (AGU) Fall Meeting 2011*, San Francisco, CA, USA, December 2011.
- Lackner B. C., **A. K. Steiner***, M. A. Ringer, and G. Kirchengast (poster), Evaluation of tropical convection regimes in the HadGEM2 model using radio occultation observations, Abstract GC41A-0780, *American Geophysical Union (AGU) Fall Meeting 2011*, San Francisco, CA, USA, December 2011 (*presenter).
- Ladstädter, F., **A. K. Steiner***, L. Haimberger, C. Tavalato, U. Foelsche, and G. Kirchengast, Beobachtung der Temperatur der unteren Stratosphäre mit (A)MSU, Radiosonden und GPS Radio-Okkultation: Ein Vergleich, 4. *Österr. MeteorologInnentag*, Klagenfurt, Austria, November 2011.
- Steiner, A. K.**, S-P. Ho, D. Hunt, G. Kirchengast, A. J. Mannucci, B. Scherllin-Pirscher, H. Gleisner, A. von Engel, T. Schmidt, C. Ao, S. S. Leroy, U. Foelsche, Y-H. Kuo, E. R. Kursinski, K. B. Lauritsen, S. Syndergaard, C. Marquardt, C. Rocken, W. Schreiner, S. Sokolovskiy, J. Wickert, Structural uncertainty of the CHAMP RO climate record from different data centers, *5th Formosat-3/COSMIC Data Users Workshop and Int'l Conference on GPS Radio Occultation (ICGPSRO) 2011*, Taipei, Taiwan, April 2011.
- Steiner, A. K.**, S-P. Ho, D. Hunt, G. Kirchengast, A. J. Mannucci, B. Scherllin-Pirscher, H. Gleisner, A. von Engel, T. Schmidt, C. Ao, S. S. Leroy, U. Foelsche, Y-H. Kuo, E. R. Kursinski, K. B. Lauritsen, S. Syndergaard, C. Marquardt, C. Rocken, W. Schreiner, S. Sokolovskiy, J. Wickert, Structural uncertainty of the CHAMP climate record from different data centers, *Int'l Workshop on Occultations for Probing Atmosphere and Climate (OPAC) 2010*, Graz, Austria, September 2010.
- Scherllin-Pirscher B., **A. K. Steiner***, U. Foelsche, G. Kirchengast, and Y.-H. Kuo (poster), Error characteristics of GPS radio occultation atmospheric profiles, *OPAC 2010 International Workshop*, Graz, Austria, September 2010 (*presenter).
- Steiner, A. K.**, U. Foelsche, B. Scherllin-Pirscher, B. C. Lackner, F. Ladstädter, and G. Kirchengast, Monitoring des Klimawandels mit Satellitenmethoden – GPS Radio-Okkultation, *Summer University – Graz in Space 2010*, Univ. of Graz, Austria, September 2010.
- Steiner A. K.**, G. Kirchengast, B. C. Lackner, G. C. Hegerl, B. Pirscher, and U. Foelsche (poster), Climate change detection in the UTLS with the GPS radio occultation record, *Eos Trans. AGU 90(52)*, Fall Meet. Suppl., Abstract A31D-0154, *American Geophysical Union (AGU) Fall Meeting 2009*, San Francisco, CA, USA, December 2009.
- Steiner A. K.**, G. Kirchengast, B. C. Lackner, G. C. Hegerl, B. Pirscher, and U. Foelsche (poster), Climate change detection with the GPS radio occultation record, 3. *Österr. MeteorologInnentag*, Graz, Austria, November 2009.
- Steiner, A. K.**, G. Kirchengast, B. C. Lackner, G. C. Hegerl, B. Pirscher, and U. Foelsche, Climate change detection with the GPS radio occultation record, *4th Formosat-3/COSMIC Workshop*, Boulder, CO, USA, October 2009.
- Steiner A. K.**, G. Kirchengast, B. C. Lackner*, G. C. Hegerl, B. Pirscher, M. Borsche and U. Foelsche (poster), The GPS radio occultation record – a novel dataset for atmospheric change detection, *WAVACS Summer School*, Cargese/Corsica, France, September 2009.
- Steiner, A. K.**, B. C. Lackner, G.C. Hegerl, B. Pirscher, M. Borsche, U. Foelsche, and G. Kirchengast, Atmospheric change detection based on the GPS radio occultation record, *Geophysical Research Abstracts*, Vol. 11, EGU2009-9074, *European Geosciences Union (EGU) General Assembly 2009*, Vienna, Austria, April 2009.
- Steiner, A. K.**, G. Kirchengast, B. C. Lackner, G. C. Hegerl, B. Pirscher, M. Borsche, and U. Foelsche (poster), The GPS radio occultation record – a novel dataset for atmospheric change detection, *The IARU Scientific Congress on Climate Change: Global Risks, Challenges and Decisions*, Copenhagen, Denmark, March 2009.
- Steiner, A. K.**, G. Kirchengast*, B. C. Lackner, B. Pirscher, M. Borsche, and U. Foelsche, Detection of tropical temperature change based on GPS radio occultation within 1995 to 2008, *Eos Trans. AGU 89(53)*, Fall Meet. Suppl., Abstract GC31B-5, *American Geophysical Union (AGU) Fall Meeting 2008*, San Francisco, CA, USA, December 2008 (*presenting author).
- Steiner, A. K.**, U. Foelsche, B. C. Lackner, F. Ladstädter, M. Borsche, B. Pirscher, A. Leuprecht, J. Fritzer, M. Pock, and G. Kirchengast (invited), Klimamonitoring und Atmosphärenanalyse mittels Radio-Okkultation: Überblick und aktuelle Ergebnisse, *Meteorol.-Geophys. Kolloquium*, Univ. Wien, Austria, November 2008.
- Steiner, A. K.**, Monitoring des Klimawandels mit Satellitenmethoden (GPS Atmosphärensondierung), *LehrerInnenfortbildung – Päd.Hochschulseminar*, Graz, Austria, October 2008.

- Steiner, A. K.**, G. Kirchengast, B. C. Lackner, B. Pirscher, M. Borsche, and U. Foelsche, Atmospheric climate change detection based on the GPS radio occultation record within 1995 to 2007, *5th IAGA/ICMA/CAWSES Workshop "Long-term Trends and Changes in the Atmosphere"*, St. Petersburg, Russia, September 2008.
- Steiner, A. K.**, Klimamonitoring und Atmosphärenanalyse mittels Radio-Okkultation: Aktuelle Forschung am Wegener Zentrum, *2. Österr. Meteorologentag*, Wien, Austria, November 2007.
- Steiner, A. K.**, Monitoring des Klimawandels mit Satellitenmethoden (GPS Atmosphärensondierung), *LehrerInnenfortbildung*, Graz, Austria, May 2007.
- Steiner, A. K.**, G. Kirchengast, M. Borsche, and U. Foelsche, A comparison of lower stratospheric temperatures from the 2001-2006 CHAMP radio occultation and MSU/ASMU climate records, Geophysical Research Abstracts, Vol. 9, EGU2007-A-10228, *European Geosciences Union (EGU) General Assembly 2007*, Vienna, Austria, April 2007.
- Steiner, A. K.**, G. Kirchengast, M. Borsche, U. Foelsche, and T. Schöngassner (poster), A multi-year comparison of lower stratospheric temperatures from CHAMP radio occultation data with MSU/AMSU records WGNE/PCMDI *Workshop on Systematic Errors in Climate and NWP Models*, San Francisco, USA, February 2007.
- Steiner, A. K.**, G. Kirchengast, M. Borsche, U. Foelsche, and T. Schöngassner (poster), Comparison of upper air temperatures: MSU/AMSU and CHAMP radio occultation data, *4th Workshop on Long-Term Changes and Trends in the Atmosphere*, Sodankylä, Finland, September 2006.
- Steiner, A. K.**, G. Kirchengast, M. Borsche, U. Foelsche, and T. Schöngassner (poster), Upper air temperatures from satellite records: A comparison of MSU and CHAMP radio occultation data, Geophysical Research Abstracts Vol. 8, 09559, *EGU General Assembly 2006*, Vienna, Austria, April 2006.
- Steiner, A. K.**, A. Gobiet, U. Foelsche, M. Borsche, G. Kirchengast, T. Schmidt, and J. Wickert, Validation of stratospheric temperatures in ECMWF analyses with CHAMP radio occultation climatologies, *2nd GPS Radio Occultation Data User's Workshop*, Lansdowne, VA, USA, August 2005.
- Steiner, A. K.**, A. Löscher, and G. Kirchengast, Error characteristics of refractivity profiles retrieved from CHAMP radio occultation data, *2nd Int'l Workshop on Occultations for Probing Atmosphere and Climate (OPAC-2)*, Graz, Austria, September 2004.
- Steiner, A. K.**, U. Foelsche, G. Kirchengast, A. Gobiet, A. Löscher, J. Wickert and T. Schmidt (poster), CHAMPCLIM: Climatologies based on radio occultation observations, *1st International CLIVAR Conference*, Baltimore, MD, USA, June 2004.
- Steiner, A. K.**, A. Löscher, and G. Kirchengast, Error characteristics of refractivity profiles retrieved from CHAMP radio occultation data, Geophysical Research Abstracts, Vol. 6, 05423, *European Geosciences Union (EGU) 1st General Assembly*, Nice, France, April 2004.
- Steiner, A. K.** (invited poster): Environmental research in Biosphere 2, *15th Annual Conference of the Academia Europea*, Graz, Austria, September 2003.
- Steiner, A. K.**, and G. Kirchengast, Empirical error characteristics of radio occultation data for data assimilation systems, Geophysical Research Abstracts, Vol. 5, 12719, *EGS-AGU-EUG Joint Assembly 2003*, Nice, France, April 2003.
- Steiner, A. K.**, and G. Kirchengast, Climate monitoring using GNSS occultation: Empirical error analysis of GNSS radio occultation data, *Workshop on Atmospheric Investigations Using GPS Techniques, 4th Oersted International Science Team Conference (OIST-4)*, Copenhagen, Denmark, September 2002.
- Steiner, A. K.**, and G. Kirchengast (poster): Ensemble-based analysis of errors in atmospheric profiles retrieved from GNSS occultation data, *1st Int'l Workshop on Occultations for Probing Atmosphere and Climate (OPAC-1)*, Graz, Austria, September 2002.
- Steiner, A. K.**, and G. Kirchengast (poster): Empirical error analysis based on realistically simulated GNSS radio occultation data, Geophysical Research Abstracts, Vol. 2, *27th Gen. Assembly of the European Geophysical Society*, Nice, France, April 2002.
- Steiner, A. K.**, and G. Kirchengast (prevented from coming; presentation pdf sent to convener for distrib.), Empirical error analysis of GNSS radio occultation data, *8th Scientific Assembly of the International Association of Meteorology and Atmospheric Sciences (IAMAS)*, Innsbruck, Austria, July 2001.

Steiner, A. K., and G. Kirchengast, Atmosphere profiles from GPS/MET observations: Data validation and analysis of gravity wave spectra, *Eos Trans. AGU* 79(45), Fall Meet. Suppl., Abstract A32C-10, *American Geophysical Union (AGU) Fall Meeting 1998*, San Francisco, CA, USA, December 1998.

Steiner, A. K., K. Hocke, G. Kirchengast, and H.P. Ladreiter, Analysis of GPS/MET data and error estimation with discrete matrix inversion, *Ann. Geophys. Part II, Suppl II*, Vol. 15, C521, *22nd General Assembly of the European Geophysical Society (EGS)*, Vienna, Austria, April 1997.

Presentations as Co-Author

2019

Cigala, V. R. Biondi, **A. K. Steiner**, G. Kirchengast, and H. Brenot (poster), Detection and monitoring of the volcanic ash cloud top height applying the Global Navigation Satellite System Radio Occultation technique, *EGU General Assembly 2019*, Vienna, Austria, April 2019.

2018

Biondi R., F. J. Prata, **A. K. Steiner**, and G. Kirchengast (poster), GPS radio occultations for understanding the impact of volcanic eruptions on atmospheric variability and climate, *AGU Fall Meeting 2018*, Washington, D.C., USA, December 2018.

Kirchengast, G., F. Ladstädter, B. Angerer, **A.K. Steiner**, M. Gorfer, and F. Lippl, Towards monitoring trends and variability in the atmospheric heat content primarily based on radio occultation, *WCRP Workshop "The Earth's Energy Imbalance and its implications"*, Toulouse, France, November 2018.

Ladstädter, F., H. Wilhelmson, and **A. K. Steiner** (poster), Tropical temperature and tropopause trends from vertically high resolved observations, *SPARC General Assembly 2018*, Kyoto, Japan, October 2018.

Steininger, K. W., C. Unterberger, L. Brunner, S. Nabernegg, **A. Steiner**, S. Edith, S. Monschein, and H. Truhetz: Spring frost risk for regional fruit production under a warmer climate, *6th World Congress of Environmental and Resource Economists*, Gothenburg, Sweden, June 2018.

Knittel, N., M. Jury, B. Bednar-Friedl, G. Bachner, and **A. Steiner**, The effects of climate change induced labour productivity losses in main trading partner countries on Germany's foreign trade, *AURÖ- Workshop for young researchers: "Environmental and resource economics"*, Osnabrück, Germany, February 2018.

Knittel, N., M. Jury, B. Bednar-Friedl, G. Bachner, and **A. Steiner**, The impacts of global climate change on Germany's international trade: A model analysis of heat related productivity losses, *The EAERE-FEEM-VIU European Summer School in Resource and Environmental Economics (Climate Change Assessment: Economic Models and Evaluation Criteria)*, Venice, Italy, February 2018.

Groß-Vogt, K., T. Hermann, **A. K. Steiner**, and S. Kartadinata, Klima | Anlage - Performing Climate Data, *2nd World Symposium on Climate Change Communication*, Graz, Austria, February 2018

Ladstädter, F., **A. K. Steiner**, and H. Wilhelmson (poster), Climate variability and trends in the UTLS from GPS RO, AMSU, and radiosondes observations (poster), *SPARC Workshop on The UTLS: Current Status and Emerging Challenges*, Johannes Gutenberg University, Mainz, Germany, February 2018

Wilhelmson, H., F. Ladstaedter, and **A. K. Steiner** (poster), Tropopause variability and trends from radio occultation and ERA-Interim (poster), *SPARC Workshop on The UTLS: Current Status and Emerging Challenges*, Johannes Gutenberg University, Mainz, Germany, February 2018

2017

Brunner, L., N. Schaller, J. Sillmann, and **A. K. Steiner**, Dependence of present and future European heat waves and cold spells on the location of atmospheric blocking, A41B-2269, *American Geophysical Union (AGU) Fall Meeting 2017*, New Orleans, LA, USA, December 2017.

Haimberger, L., H. Hersbach, P. Dahlgren, **A. K. Steiner**, and F. Ladstädter, Homogenized radiosonde temperature data for climate reanalyses, *5th International Conference on Reanalysis (ICR5)*, Rome, Italy, November 2017.

- Brunner, L., N. Schaller, J. Sillmann, and **A. K. Steiner**, Dependence of present and future European heat waves and cold spells on the location of atmospheric blocking, 7. *Österreichischer MeteorologInnenstag*, Graz, Austria, November 2017.
- Maycock, A. C., and **A. K. Steiner**, The SPARC Atmospheric Temperature Changes and their Drivers Activity, *13th SPARC Data Assimilation Workshop*, Reading, UK, October 2017.
- Biondi, R., S. Corradini, **A. K. Steiner**, G. Kirchengast, L. Guerrieri, L. Merrucci, D. Stelitano, and S. Pugnaghi, How can the GNSS radio occultation improve volcanic clouds studies?, *COSMIC-IROWG 2017 Workshop*, Estes Park, CO, USA, September 2017.
- Ladstädter, F., H. Wilhelmssen, B. Angerer, and **A. K. Steiner**, Differences in trends and anomalies of upper-air observations from GPS RO, AMSU, and radiosondes, *COSMIC-IROWG 2017*, Estes Park, CO, USA, September 2017.
- Wilhelmssen, H., F. Ladstädter, B. Scherllin-Pirscher, and **A. K. Steiner**, Atmospheric QBO and ENSO indices with high vertical resolution from GNSS RO, *COSMIC-IROWG 2017*, Estes Park, CO, USA, September 2017.
- Brunner, L., N. Schaller, J. Sillmann, G. C. Hegerl, and **A. K. Steiner**, Dependence of present and future European heatwaves and cold spells on the location of atmospheric blocking, *TITAN workshop*, Edinburgh, UK, September 2017.
- Angerer, B., F. Ladstädter, B. Scherllin-Pirscher, M. Schwärz, and **A. K. Steiner** (poster), Quality Aspects of the WEGC Multi-Satellite GPS Radio Occultation Record, *Geophys. Res. Abstracts, Vol. 19, EGU2017-15273, EGU General Assembly 2017*, Vienna, Austria, April 2017.
- Brunner, L., and **A. K. Steiner**, Observing atmospheric blocking with GPS radio occultation – one decade of measurements, *Geophys. Res. Abstracts, Vol. 19, EGU2017-13099, EGU General Assembly 2017*, Vienna, Austria, April 2017.
- Brunner, L., **A. K. Steiner**, and J. Sillmann (poster), Investigating the impact of atmospheric blocking on temperature extremes across Europe using an objective index, *Geophys. Res. Abstracts, Vol. 19, EGU2017-12277, EGU General Assembly 2017*, Vienna, Austria, April 2017.
- Brunner L., G. Hegerl, and **A. K. Steiner** (poster), Linking atmospheric blocking to European temperature extremes in spring, *Geophys. Res. Abstracts, Vol. 19, EGU2017-12703, EGU General Assembly 2017*, Vienna, Austria, April 2017.
- Ladstädter, F., H. Wilhelmssen, and **A. K. Steiner**, Differences in trends and anomalies of upper-air observations from GPS RO, radiosondes, and AMSU, *Geophys. Res. Abstracts, Vol. 19, EGU2017-6532-2, EGU General Assembly 2017*, Vienna, Austria, April 2017.
- Wilhelmssen, H., B. Scherllin-Pirscher, F. Ladstädter, and **A. K. Steiner** (poster), QBO and ENSO indices from GPS Radio Occultation to describe atmospheric variability, *Geophys. Res. Abstracts, Vol. 19, EGU2017-8279-3, EGU General Assembly 2017*, Vienna, Austria, April 2017.

2016

- Brunner, L., G. C. Hegerl, and **A. K. Steiner**, Linking atmospheric blocking in spring to European temperature extremes, A12D-06, *American Geophysical Union (AGU) Fall Meeting 2016*, San Francisco, CA, USA, December 2016.
- Maycock, A. C., **A. K. Steiner**, and W. Randel, Atmospheric temperature changes and their drivers – SPARC ATC activity, *SPARC 24th Scientific Steering Group meeting*, Berlin, Germany, November 2015.
- Brunner, L., G. C. Hegerl, and **A. K. Steiner** (poster), Linking atmospheric blocking in spring to European temperature extremes, *Summer School on Coping with Climate Change*, Reinischkogel, Austria, Sep. 2016.
- Angerer, B., F. Ladstädter, B. Scherllin-Pirscher, M. Schwärz, and **A. K. Steiner** (poster), Quality aspects of the WEG multi-satellite RO record, *OPAC-IROWG 2016 International Workshop*, Seggau Castle, Austria, September 2016.
- Biondi, R., **A. K. Steiner**, and G. Kirchengast, GPS radio occultation for studying extreme atmospheric events: demonstrated utility and future prospects, *OPAC-IROWG 2016 International Workshop*, Seggau Castle, Austria, September 2016.

- Brunner, L., **A. K. Steiner**, B. Scherllin-Pirscher, and M. W. Jury, Blocking detection and analysis with GPS radio occultation observations, *OPAC-IROWG 2016 International Workshop*, Seggau Castle, Austria, September 2016
- Hierro, R., **A. K. Steiner**, A. de la Torre, and P. Llamedo (poster), Gravity waves and convective systems over the Alps and Andes, *OPAC-IROWG 2016 International Workshop*, Seggau Castle, Austria, September 2016.
- Kirchengast, G., M. Schwaerz, J. Schwarz, B. Scherllin-Pirscher, C. Pock, J. Innerkofler, V. Proschek, **A. K. Steiner**, J. Danzer, F. Ladstaedter, U. Foelsche, The reference occultation processing system approach to interpret GNSS radio occultation as SI-traceable planetary system refractometer, *OPAC-IROWG 2016 International Workshop*, Seggau Castle, Austria, September 2016.
- Wilhelmsen, H., B. Scherllin-Pirscher, F. Ladstädter, and **A. K. Steiner** (poster), Atmospheric QBO indices from GPS radio occultation (poster), *OPAC-IROWG 2016 International Workshop*, Seggau Castle, Austria, September 2016.
- Kirchengast, G., M. Schwaerz, J. Schwarz, B. Scherllin-Pirscher, C. Pock, J. Innerkofler, V. Proschek, **A. K. Steiner**, J. Danzer, F. Ladstaedter, U. Foelsche (invited), Using GNSS radio occultation as insitu-type SI-traceable planetary system refractometer: a new benchmark for monitoring the climate, *13th Annual Meeting Asia Oceania Geosciences Society (AOGS 2016)*, Beijing, China, July-August 2016.
- Kirchengast, G., M. Schwärz, J. Schwarz, B. Scherllin-Pirscher, C. Pock, J. Innerkofler, V. Proschek, **A. K Steiner**, J. Danzer, F. Ladstädter, and U. Foelsche, Employing GNSS radio occultation for solving the global climate monitoring problem for the fundamental state of the atmosphere, *EGU General Assembly*, Vienna, Austria, April 2016.
- Foelsche, U., **A. K. Steiner**, B. Scherllin-Pirscher, J. Danzer, F. Ladstädter, M. Schwärz, T. Rieckh, J. Schwarz, R. Klingler, R. Biondi, L. Brunner, J. Fritzer, und G. Kirchengast, Beobachtung von klimatischen Veränderungen und atmosphärischen Prozessen mittels GPS Radio-Okkultation, *17. Österreichischer Klimatag*, Graz, Austria, April 2016.
- Brunner, L., **A. K Steiner**, B. Scherllin-Pirscher, and M. W. Jury, Blocking detection and analysis with GPS radio occultation observations, *SPARC Workshop on Atmospheric Blocking*, Reading, UK, April 2016.
- Brunner, L., **A. K Steiner**, G. Hegerl, B. Scherllin-Pirscher, and M. W. Jury, Blocking detection and analysis with GPS radio occultation observations, *Contemporary climate talk*, School of Geosciences, University of Edinburgh, Edinburgh, UK, March 2016.

2015

- Kirchengast, G., M. Schwärz, J. Schwarz, B. Scherllin-Pirscher, C. Pock, J. Innerkofler, V. Proschek, **A. K Steiner**, J. Danzer, F. Ladstädter, and U. Foelsche, Towards solving the global climate monitoring problem for the fundamental state of the atmosphere with GNSS radio occultation, *AGU Fall Meeting*, San Francisco, CA, USA, December 2015.
- Foelsche, U., **A. K. Steiner**, B. Scherllin-Pirscher, J. Danzer, F. Ladstädter, M. Schwärz, T. Rieckh, J. Schwarz, R. Klingler, R. Biondi, L. Brunner, J. Fritzer, und G. Kirchengast (poster), Beobachtung von atmosphärischen Prozessen und klimatischen Veränderungen mittels GPS Radio-Okkultation, *6. Österreichischer MeteorologInnenstag*, Wien, Österreich, November 2015.
- Brunner, L., **A. K Steiner**, B. Scherllin-Pirscher, and M. W. Jury (poster), Blocking detection with observations from radio occultation, *2015 Swiss Climate Summer School: Extreme events and climate*, Ascona, Switzerland, August 2015.
- Brunner, L., **A. K Steiner**, B. Scherllin-Pirscher, M. W. Jury, and F. Ladstädter (poster), Blocking detection with observations from radio occultation: A case study, *WCRP/SPARC Workshop on Storm Tracks*, Grindelwald, Switzerland, August 2015.
- Scherllin-Pirscher, B., **A. K. Steiner**, G. Kirchengast, and S. S. Leroy (poster), Atmospheric wind fields from GPS radio occultation, *WCRP/SPARC Workshop on Storm Tracks*, Grindelwald, Switzerland, August 2015.

Foelsche, U., Scherllin-Pirscher, B., J. Danzer, F. Ladstädter, **A. K. Steiner**, and G. Kirchengast (oral invited, and poster), Monitoring the climate of the upper troposphere and lower stratosphere with radio occultation data, *Our Common Future Under Climate Change – CFCC15*, Paris, France, June 2015.

Biondi, R., **A. K. Steiner**, G. Kirchengast, H. Brenot, and T. Rieckh, Exploring the capability of GPS radio occultation for detecting and monitoring volcanic clouds, *26th IUGG General Assembly 2015*, Prague, Czech Republic, June 2015.

Biondi, R., **A. K. Steiner**, G. Kirchengast, H. Brenot, and T. Rieckh, Investigating stratospheric warming due to the Nabro eruption with GPS radio occultation, *26th IUGG General Assembly 2015*, Prague, Czech Republic, June 2015.

Biondi, R., **A. K. Steiner**, and G. Kirchengast (poster), Characterization of tropical cyclones over different ocean basins, *26th IUGG General Assembly 2015*, Prague, Czech Republic, June 2015.

Kirchengast, G., M. Schwärz, J. Schwarz, B. Scherllin-Pirscher, A. Plach, C. Pock, J. Fritzer, and **A. K. Steiner**, A. Plach, J. Danzer, U. Foelsche, and F. Ladstädter (invited), Reference occultation processing system (rOPS) for cal/val and climate: a new GNSS RO retrieval chain with integrated uncertainty propagation, *IROWG-4 International Workshop*, Melbourne, Australia, April 2015.

Biondi, R., **A. K. Steiner**, G. Kirchengast, H. Brenot, and T. Rieckh, Did the Nabro volcanic eruption directly overshoot the tropopause?, *Geophys. Res. Abstracts*, Vol. 17, EGU2015-3039, *EGU General Assembly 2015*, Vienna, Austria, April 2015.

Biondi, R., **A. K. Steiner**, and G. Kirchengast (poster), Towards evaluating the intensity of convective systems by using GPS radio occultation profiles, *Geophys. Res. Abstracts*, Vol. 17, EGU2015-3036, *EGU General Assembly 2015*, Vienna, Austria, April 2015.

Brunner, L., **A. K. Steiner**, B. Scherllin-Pirscher, and M. Jury (poster), Feasibility of blocking detection in observations from radio occultation, *Geophys. Res. Abstracts*, Vol. 17, EGU2015-1519, *EGU General Assembly 2015*, Vienna, Austria, April 2015.

Ladstädter, F., **A. K. Steiner**, M. Schwärz, and G. Kirchengast, Climate comparison of reference upper-air measurements: GPS radio occultation and GRUAN radiosondes, *Geophys. Res. Abstracts*, Vol. 17, EGU2015-1918, *EGU General Assembly 2015*, Vienna, Austria, April 2015.

Scherllin-Pirscher, B., **A. K. Steiner**, G. Kirchengast, and S. Leroy (poster), Montgomery potential and wind fields on isentropic surfaces from GPS radio occultation, *Geophys. Res. Abstracts*, Vol. 17, EGU2015-10523, *EGU General Assembly 2015*, Vienna, Austria, April 2015.

Scherllin-Pirscher, B., F. Ladstädter, **A. K. Steiner**, and G. Kirchengast, Characteristics of atmospheric Kelvin waves during warm and cold ENSO phases observed with GPS RO, *Geophys. Res. Abstracts*, Vol. 17, EGU2015-10367, *EGU General Assembly 2015*, Vienna, Austria, April 2015.

Vogt K., H. H. Rutz, V. Goudarzi, R. Höldrich, **A. K. Steiner**, M. Jury, R. Walter, and R. Parncutt (poster), SysSon - A framework for Systematic Sonification design *Geophys. Res. Abstracts*, Vol. 17, EGU2015-14551, *EGU General Assembly 2015*, Vienna, Austria, April 2015.

Biondi, R., T. Rieckh, **A. K. Steiner**, and G. Kirchengast, GPS radio occultation for detecting and monitoring volcanic clouds, *Volcanoes, Climate, and Society – Bicentenary of the great Tambora eruption*, Bern, Switzerland, April 2015.

2014

Biondi, R., **A. K. Steiner**, T. Rieckh and G. Kirchengast, A new method for detecting and monitoring atmospheric natural hazards with GPS RO, *AGU Fall Meeting*, San Francisco, CA, USA, December 2014.

Biondi, R., **A. K. Steiner**, T. Rieckh and G. Kirchengast (oral), GPS radio occultation for studying extreme events, *Eighth FORMOSAT-3/COSMIC Data Users' Workshop*, Boulder, CO, USA, September-October 2014.

Scherllin-Pirscher, B., **A. K. Steiner**, and G. Kirchengast, The El Niño–Southern Oscillation signal in geopotential height and wind derived from GPS RO, *Eighth FORMOSAT-3/COSMIC Data Users' Workshop*, Boulder, CO, USA, September-October 2014.

Biondi, R., T. Rieckh, **A. K. Steiner**, and G. Kirchengast, GNSS Radio Occultations for monitoring volcanic ash clouds, *Geophys. Res. Abstracts*, Vol. 16, EGU2014-1620-1, *EGU General Assembly 2014*, Vienna, Austria, April-May 2014.

Biondi, R., T. Rieckh, **A. K. Steiner**, and G. Kirchengast, Characteristics of tropical cyclones and overshooting from GPS radio occultation data, *Geophys. Res. Abstracts*, Vol. 16, EGU2014-1619-1, *EGU General Assembly 2014*, Vienna, Austria, April-May 2014.

Biondi, R., T. Rieckh, **A. K. Steiner**, and G. Kirchengast, A reference atmosphere from GPS radio occultation profiles, *Geophys. Res. Abstracts*, Vol. 16, EGU2014-5972, *EGU General Assembly 2014*, Vienna, Austria, April-May 2014.

Brunner, L., **A. K. Steiner**, B. Scherllin-Pirscher, and G. Kirchengast (poster), Analysis of the vertically resolved ozone and temperature evolution in the lower and middle stratosphere, *Geophys. Res. Abstracts*, Vol. 16, EGU2014-361, *EGU General Assembly 2014*, Vienna, Austria, April-May 2014.

Foelsche, U. B. Scherllin-Pirscher, J. Danzer, **A. K. Steiner**, F. Ladstädter, T. Rieckh, J. Schwarz, R. Klingler, und G. Kirchengast, Beobachtung von Prozessen und klimatischen Veränderungen in der Atmosphäre mittels Radio-Okkultationsdaten, *15. Österr. Klimatag*, Univ. Innsbruck, Innsbruck, Austria, April 2014.

Biondi, R. **A. K. Steiner**, G. Kirchengast, and S. Bonafoni, The potential combined use of GPS radio occultations and ground based GPS for detecting continental storm intensity, *COST ES1206 GNSS4SWEC International Workshop*, Munich, Germany, February 2014.

Scherllin-Pirscher, B., **A. K. Steiner**, and G. Kirchengast, Geopotential height and geostrophic wind from radio occultation data, *5th SPARC General Assembly*, Queenstown, New Zealand, January 2014.

2013

Biondi, R., **A. K. Steiner**, and G. Kirchengast, A new GNSS technique for detecting and analyzing convective systems and tropical cyclones, *AGU Fall Meeting*, San Francisco, CA, USA, December 2013.

Kirchengast*, G., M. Schwärz, J. Fritzer, J. Schwarz, B. Scherllin-Pirscher, and **A. K. Steiner** (poster), Solving the global climate monitoring problem in the atmosphere: Towards SI-tied climate records with integrated uncertainty propagation, *AGU Fall Meeting*, San Francisco, CA, USA, December 2013.

Biondi, R., **A. K. Steiner**, and G. Kirchengast (poster), CONSYDER: CONvective Systems Detection and analysis using Radio occultations, *OPAC-IROWG 2013 International Workshop*, Seggau Castle, Austria, September 2013.

Ladstädter, F., M. Schwärz, B. Scherllin-Pirscher, J. Schwarz, **A. K. Steiner**, L. Haimberger, and G. Kirchengast (poster), High resolution climate monitoring in the polar atmosphere: Inter-validation of radiosonde and radio occultation temperature profiles, *OPAC-IROWG 2013 International Workshop*, Seggau Castle, Austria, September 2013.

Rutz, H. H., V. Goudarzi, K. Vogt, **A. K. Steiner**, and M. Jury (poster), SysSon: A Systematic design for the Sonification of radio occultation data, *OPAC-IROWG 2013 International Workshop*, Seggau Castle, Austria, September 2013.

Ladstädter, F., M. Schwärz, B. Scherllin-Pirscher, J. Schwarz, **A. K. Steiner**, L. Haimberger, and G. Kirchengast (poster), Inter-validation of radiosonde and radio occultation temperature profiles: High resolution climate monitoring in the polar atmosphere, *Davos Atmosphere and Cryosphere Assembly DACA-13*, Davos, Switzerland, July 2013.

Foelsche, U., B. Scherllin-Pirscher, F. Ladstädter, J. Danzer, **A. K. Steiner**, J. Schwarz, and G. Kirchengast, Observing climate with GNSS radio occultation: Characterization and mitigation of systematic errors, *AGU Meeting of the Americas 2013*, Cancun, Mexico, May 2013.

Foelsche, U., B. Scherllin-Pirscher, F. Ladstädter, J. Danzer, T. Rieckh, **A. K. Steiner**, and G. Kirchengast, Climatologies of the upper troposphere and lower stratosphere based on GNSS radio occultation data as basis for trend studies, *35th International Symposium on Remote Sensing of the Environment*, Beijing, China, April 2013.

2012

Foelsche, U., B. Scherllin-Pirscher, F. Ladstädter, J. Danzer, **A. K. Steiner**, J. Fritzer, and G. Kirchengast (poster), Essential climate variables from radio occultation, *ESA Atmospheric Science Conference 2012*, June 2012.

Foelsche, U., B. Scherllin-Pirscher, F. Ladstädter, J. Danzer, T. Rieckh, **A. K. Steiner**, and G. Kirchengast (oral and poster), Radio occultation – a new tool for the observation of changes in the thermal structure of the atmosphere after major volcanic eruptions, *AGU Chapman Conference on Volcanism and the Atmosphere*, Selfoss, Iceland, June 2012

Scherllin-Pirscher, B., **A. K. Steiner**, U. Foelsche, and G. Kirchengast (poster), Upper troposphere and lower stratosphere observations with radio occultation, *SPARC Workshop on the Brewer-Dobson Circulation*, Grindelwald, Switzerland, June 2012.

2011

Foelsche, U., B. Scherllin-Pirscher, F. Ladstädter, **A. K. Steiner**, J. Fritzer, and G. Kirchengast (poster), Atmosphärenbeobachtung mit der GPS Radio-Okkultationsmethode, 4. *Österr. MeteorologInnenstag*, Klagenfurt, Austria, November 2011.

Foelsche, U., B. Scherllin-Pirscher, F. Ladstädter, **A. K. Steiner**, J. Fritzer, and G. Kirchengast, Observing Earth's climate and atmospheric change with GNSS radio occultation, *DMI Seminar*, Danish Meteorological Institute, Copenhagen, Denmark, November 2011.

Ladstädter, F., **A. K. Steiner**, L. Haimberger, C. Tavolato, U. Foelsche, G. Kirchengast, Upper-air temperature Records: A comparison of GPS radio occultation, radiosondes and MSU/AMSU in the lower stratosphere, *DMI Seminar*, Danish Meteorological Institute, Copenhagen, Denmark, November 2011.

Foelsche, U., B. Scherllin-Pirscher, F. Ladstädter, **A. K. Steiner**, and G. Kirchengast, Konsistente Klimatologien der Atmosphäre mittels Radio-Okkultation, 12. *Österr. Klimatag*, Univ. f. Bodenkultur, Vienna, Austria, September 2011.

Lackner, B. C., **A. K. Steiner**, G. C. Hegerl, and G. Kirchengast, Klimawandeldetektion in der freien Atmosphäre mit GPS Radio-Okkultation, 12. *Österr. Klimatag*, Univ. f. Bodenkultur, Vienna, Austria, September 2011.

Foelsche, U., B. Scherllin-Pirscher, **A. K. Steiner**, F. Ladstädter, and G. Kirchengast, Observing Earth's atmosphere and climate with GNSS radio occultation, *2011 IEEE Geoscience and Remote Sensing Symposium*, Vancouver, Canada, July 2011.

Ladstädter, F., **A. K. Steiner**, L. Haimberger, C. Tavolato, U. Foelsche, and G. Kirchengast, Upper-air temperature records: A comparison of GPS radio occultation, radiosondes and MSU/AMSU in the lower stratosphere, *The XXV IUGG General Assembly – Earth on the Edge: Science for a Sustainable Planet*, Melbourne, Australia, June–July 2011.

Foelsche, U., B. Scherllin-Pirscher, S. Syndergaard, J. Fritzer, **A. K. Steiner**, and G. Kirchengast, On the consistency of radio occultation climatologies from different satellites and possible reasons for common systematic errors, *5th FORMOSAT-3/COSMIC Data Users Workshop and Int'l Conference on GPS Radio Occultation (ICGPSRO) 2011*, Taipei, Taiwan, April 2011.

Lackner B. C., **A. K. Steiner**, G. C. Hegerl, and G. Kirchengast (poster), GNSS radio occultation trend patterns for atmospheric climate change detection with a fingerprinting method, *Geophysical Research Abstracts*, Vol. 13, EGU2011-9872, *EGU General Assembly 2011*, Vienna, Austria, April 2011.

Foelsche, U., B. Scherllin-Pirscher, **A. K. Steiner**, and G. Kirchengast (invited), Radio occultation: A new tool for observing atmosphere and climate with higher accuracy than ever before, *SPACE Research Centre Public Seminar*, RMIT University, Melbourne, Australia, February 2011.

2010

Scherllin-Pirscher B., **A. K. Steiner**, U. Foelsche, G. Kirchengast, and Y.-H. Kuo (poster), Error analysis of GPS radio occultation atmospheric profiles, Abstract G51A-0656, *American Geophysical Union (AGU) Fall Meeting 2010*, San Francisco, CA, USA, December 2010.

Ladstädter, F., **A. K. Steiner**, L. Haimberger, C. Tavolato, and G. Kirchengast (poster), Comparing stratospheric temperature records from GPS radio occultation, MSU/AMSU, and radiosondes, *URBI-Fakultätstag 2010*, Universität Graz, Austria, Oktober 2010.

Lackner, B. C., **A. K. Steiner**, G. Hegerl, and G. Kirchengast, Atmospheric climate change detection with radio occultation data, *OPAC 2010 International Workshop*, Graz, Austria, September 2010.

Ladstädter, F., **A. K. Steiner**, L. Haimberger, C. Tavorato, and G. Kirchengast, Comparing GPS radio occultation temperature records with MSU/AMSU and radiosondes for the lower stratosphere, *OPAC 2010 International Workshop*, Graz, Austria, September 2010.

Ladstädter, F., **A. K. Steiner**, L. Haimberger, C. Tavorato, and G. Kirchengast (poster), Comparing stratospheric temperature records from GPS radio occultation, MSU/AMSU, and radiosondes, *ESA Earth Observation Summer School on Earth System Monitoring & Modelling*, ESA-ESRIN, Frascati, Italy, August 2010.

Lackner, B. C., G. Hegerl, **A. K. Steiner**, and G. Kirchengast, The radio occultation record for atmospheric climate change detection, *11th International Meeting of Statistical Climatology (IMSC-11)*, Edinburgh, U.K., July 2010.

Ladstädter, F., **A. K. Steiner**, L. Haimberger, and G. Kirchengast, Comparing stratospheric temperature records from GPS radio occultation, MSU/AMSU, and radiosondes, Vol. 12, EGU2010-14650, *EGU General Assembly 2010*, Vienna, Austria, May 2010.

Lackner, B. C., G. C. Hegerl, **A. K. Steiner**, and G. Kirchengast (invited), GPS radio occultation for upper troposphere-lower stratosphere climate change detection, *IDAG (International Detection and Attribution Group) Spring Meeting*, Boulder, CO, USA, January 2010.

2009

Ladstädter, F., **A. K. Steiner**, B. C. Lackner, B. Pirscher, G. Kirchengast, P. Muigg, J. Kehrler, and H. Doleisch (poster), Analysis of climate data using interactive visual exploration methods, *Geophysical Research Abstracts*, Vol. 11, EGU2009-12637, *EGU General Assembly 2009*, Vienna, Austria, April 2009.

Kirchengast, G., U. Foelsche, **A. K. Steiner**, B. C. Lackner, B. Pirscher, S. Körner, F. Ladstädter, S. Schweitzer, V. Proschek, T. Kabas, C. Bichler, M. Pock, J. Fritzer und A. Leuprecht (invited), Von global zu lokal: Monitoring des Klimawandels in der Atmosphäre mittels Satelliten und hoch-auflösendem Bodenmessnetz, *3. Österr. MeteorologInnenstag*, Graz, Austria, November 2009.

2008

Lackner, B. C., **A. K. Steiner**, G. C. Hegerl, and G. Kirchengast (poster), Detection of climate change by means of radio occultation climatologies, *Eos Trans. AGU* 89(53), Fall Meet. Suppl., Abstract GC23A-0746, *American Geophysical Union (AGU) Fall Meeting 2008*, San Francisco, CA, USA, December 2008.

Foelsche, U., B. Pirscher, M. Borsche, **A. K. Steiner**, G. Kirchengast, C. Rocken (invited), Testing the consistency of radio occultation climatologies obtained from different satellites, *Formosat-3/COSMIC Annual Science Meeting (in conjunction with the 4th Asian Space Conference)*, Taipei, Taiwan, October 2008.

Foelsche, U., B. Pirscher, M. Borsche, **A. K. Steiner**, G. Kirchengast, C. Rocken, Global climatologies of the upper troposphere and lower stratosphere based on radio occultation data: A new database for trend studies, *5th IAGA/ICMA/CAWSES Workshop "Long-term Trends and Changes in the Atmosphere"*, St. Petersburg, Russia, September 2008.

Foelsche, U., B. Pirscher, M. Borsche, **A. K. Steiner**, G. Kirchengast, and C. Rocken (invited), Towards accurate monitoring of the upper troposphere and lower stratosphere: Testing the quality of radio occultation climatologies, *COSMIC Seminar*, Boulder, CO, USA, July 2008.

Kirchengast, G., **A. K. Steiner**, U. Foelsche, B. C. Lackner, B. Pirscher, and M. Borsche (invited), Climate records from radio occultation: Accuracy, uncertainty, trend detection, *23rd GRAS-SAG Meeting*, EUMETSAT, Darmstadt, Germany, July 2008.

Kirchengast, G., **A. K. Steiner**, U. Foelsche, B. C. Lackner, B. Pirscher, and M. Borsche (invited), Climate signal detection with GPS radio occultation measurements, *ECMWF GRAS-SAF Workshop on Applications of GPS Radio Occultation Measurements*, ECMWF, Reading, U.K., June 2008.

Kirchengast, G., and ARSCLiSys Research Group (invited), Climate utility and validation utility of GPS radio occultation measurements and the MMValRO project, *ESA Multi-Mission Validation by Radio Occultation (MMValRO) Project Kick-Off Meeting*, ESA/ESRIN, Frascati, June 2008.

Lackner, B. C., **A. K. Steiner**, F. Ladstädter, G. Kirchengast (poster), Assessing climate trend indicators from radio occultation based on reanalyses and global climate model scenarios, *Geophysical Research Abstracts*, Vol. 10, 05955, *European Geosciences Union General Assembly 2008*, Vienna, Austria, April 2008.

Ladstädter, F., **A. K. Steiner**, B. C. Lackner, G. Kirchengast, P. Muigg, J. Kehrler, and H. Doleisch (poster), Assessment of climate change indicators with the interactive visual field exploration tool SimVis, *Geophysical*

Res. Abstracts, Vol. 10, 09859, *European Geosciences Union, General Assembly 2008*, Vienna, Austria, April 2008.

Borsche, M., U. Foelsche, B. Pirscher, **A. K. Steiner**, B. C. Lackner, J. Fritzer, M. Pock, and G. Kirchengast, Radiokkultation für globale und regionale Klimabeobachtung der Atmosphäre: Ergebnisse des Wegener Zentrums Graz, *10. Österr. Klimatag*, Univ. f. Bodenkultur, Vienna, Austria, March 2008.

Kirchengast, G., EOPSClim Team, and ARSCLiSys Research Group (invited), Wegener Center Atmospheric Remote Sensing and Climate System (ARSCLiSys) Group: Occultation Activities & EOPSCIM, *EOPSCIM Final Presentation Meeting*, FFG-ALR, Vienna, Austria, March 2008.

Pirscher, B., B. C. Lackner, I. Thaler, M. Pock, U. Foelsche, **A. K. Steiner**, S. Schweitzer, and G. Kirchengast (invited), Initial validation of GRAS occultation data from MetOp and setup of regional climate monitoring including the IPCC land and ocean regions, *EOPSCIM Final Pres. Mtg.*, FFG-ALR, Vienna, March 2008.

2007

Kirchengast, G., and Wegener Center ARSCLiSys Research Group (invited), Past, on-going, and planned occultation activities of the Wegener Center/University of Graz, *Coordination Meeting ESA-FFG/ALR-WegC. WegCenter Occultation Activities*, ESA/ESTEC, Noordwijk, Netherlands, October 2007.

Kirchengast, G., U. Foelsche, **A. K. Steiner**, A. Gobiet, M. Borsche, B. Pirscher, B.C. Lackner, and J. Fritzer (invited), GPS Radio occultation based climate studies, *22nd GRAS-SAG Meeting*, EUMETSAT, Darmstadt, Germany, September 2007.

Lackner, B. C., **A. K. Steiner**, F. Ladstädter, and G. Kirchengast, Trend indicators of atmospheric climate change based on GCM scenarios and reanalyses, *3rd International Workshop on Occultations for Probing Atmosphere and Climate (OPAC-3)*, Graz, Austria, September 2007.

Ladstädter, F., **A. K. Steiner**, B. C. Lackner, G. Kirchengast, P. Muigg, J. Kehrer, and H. Doleisch (poster), SimVis: An interactive visual field exploration tool applied to climate research, *3rd International Workshop on Occultations for Probing Atmosphere and Climate (OPAC-3)*, Graz, Austria, September 2007.

Lackner, B. C., **A. K. Steiner**, F. Ladstädter, and G. Kirchengast (poster), Trend indicators of atmospheric climate change based on global climate model scenarios, *10th International Meeting on Statistical Climatology (IMSC)*, Beijing, China, August 2007.

Borsche M., G. Kirchengast, **A. K. Steiner**, and U. Foelsche, (poster), Estimation of the sampling error of a CHAMP radio occultation temperature climatology based on an empirical approach using ECMWF analyses, *Geophysical Research Abstracts*, Vol. 9, EGU2007-A-10007, *European Geosciences Union, General Assembly 2007*, Vienna, Austria, April 2007.

Foelsche, U., M. Borsche, B. Pirscher, **A. K. Steiner**, J. Wickert, and G. Kirchengast, Climate monitoring with CHAMP and FORMOSAT-3/COSMIC radio occultation data, *Geophysical Research Abstracts*, Vol. 9, EGU2007-A-06987, *European Geosciences Union General Assembly 2007*, Vienna, Austria, April 2007.

Lackner B.C., B. Pirscher, **A. K. Steiner**, and G. Kirchengast (poster), Comparison of principal component analysis and factor analysis in climate research, *Geophysical Research Abstracts*, Vol. 9, EGU2007-A-09967, *European Geosciences Union, General Assembly 2007*, Vienna, Austria, April 2007.

Kirchengast, G., U. Foelsche, **A. K. Steiner**, A. Gobiet, M. Borsche, B. Pirscher, B.C. Lackner, and J. Fritzer (invited), GPS radio occultation based climate studies, supported by EGOPS, *ESA-ProdexCN1 Final Presentation Meeting*, ESA/ESTEC, Noordwijk, Netherlands, March 2007.

Kirchengast, G., S. Schweitzer, U. Foelsche, **A. K. Steiner**, B. Pirscher, M. Borsche, and A. Gobiet (invited), Wegener Center – Recent results from occultation research and climate studies, *21st Meeting of the ESA/EUMETSAT GNSS Receiver for Atmospheric Sounding Science Advisory Group (GRAS-SAG)*, ESA/ESTEC, Noordwijk, Netherlands, January 2007.

2006

Kirchengast, G., S. Schweitzer, M. Loiselet, A. von Engel, U. Foelsche, **A. K. Steiner**, B. Pirscher, M. Borsche, and A. Gobiet (invited), GPS radio occultation climate research results from the Wegener Center and “News from Europe”, *3rd Workshop on Emerging Science Applications of Measurements from GPS/GNSS and GPS-like Signals: GPS Radio Occultations as Climate Benchmark Observations at the American Geophysical Union (AGU) Fall Meeting*, San Francisco, CA, USA, December 2006.

Foelsche, U., M. Borsche, B. Pirscher, **A. K. Steiner**, A. Gobiet, J. Wickert, T. Schmidt, and G. Kirchengast (invited), Climate monitoring with radio occultation data: From CHAMP to FORMOSAT-3/COSMIC, *FORMOSAT-3/COSMIC Workshop 2006 – Early Results and IOP*, Campaigns, Taipei, Taiwan, November 2006.

Foelsche, U., M. Borsche, **A. K. Steiner**, A. Gobiet, B. Pirscher, J. Wickert, T. Schmidt, and G. Kirchengast, Global climatologies based on RO data from CHAMP and FORMOSAT-3/COSMIC, *First FORMOSAT-3/COSMIC Data Users Workshop*, Boulder, CO, USA, October 2006.

Kirchengast, G., U. Foelsche, **A. K. Steiner**, M. Schwärz, M. Pock, J. Wickert, T. Schmidt, K.B. Lauritsen, A. Löscher, B. Kuo, C. Rocken, J. Jungclaus, L. Kornblueh, G. C. Hegerl, H. Hauser, H. Doleisch, R. Giering, T. Kaminski, J. Marotzke, B. H. Lambrigtsen, C. Retscher, and S. S. Leroy (invited). EPSCLim – Climate variability and change analysis and climate model validation supported by EPS/MetOp GRAS and IASI data, *1st EPS/MetOp RAO Workshop*, ESA/ESRIN, Frascati, Italy, May 2006.

Kirchengast, G., U. Foelsche, **A. K. Steiner**, M. Schwaerz, J. Wickert, L. Kornblueh, K.B. Lauritsen, A. Loescher, and B. H. Lambrigtsen (invited), GRASVal - Contribution to EPS GRAS and IASI Cal/Val by independent retrieval algorithms and comparison to short-term reference climatologies, *1st EPS/MetOp RAO Workshop*, ESA/ESRIN, Frascati, Italy, May 2006.

Borsche, M., G. Kirchengast, U. Foelsche, A. Gobiet, **A. K. Steiner**, T. Schmidt, and J. Wickert (poster), Tropical tropopause variability from four years of CHAMP radio occultation data, *Geophysical Research Abstracts Vol. 8, 09592, EGU General Assembly 2006*, Vienna, Austria, April 2006.

Foelsche, U., M. Borsche, A. Gobiet, **A. K. Steiner**, B. C Lackner, B. Pirscher, G. Kirchengast, J. Wickert, and T. Schmidt, Climatologies of the global atmosphere based on radio occultation data from CHAMP, *Geophysical Research Abstracts, Vol. 8, 09483, EGU General Assembly 2006*, Vienna, Austria, April 2006.

Kirchengast, G., U. Foelsche, M. Borsche, **A. K. Steiner**, B. Pirscher, B. C. Lackner, A. Gobiet, and A. Leuprecht (invited), CHAMP RO climatologies for monitoring climate variability and change and preparations for Metop/GRAS and COSMIC, *20th GRAS-SAG Meeting*, EUMETSAT, Darmstadt, Germany, March 2006.

Foelsche, U., M. Borsche, **A. K. Steiner**, A. Löscher, B. Pirscher, B. C. Lackner, A. Gobiet, and G. Kirchengast, Klima-Monitoring mit Radio-Okkultationsdaten des Satelliten CHAMP, *9. Österr. Klimatag*, Univ. f. Bodenkultur, Vienna, Austria, March 2006.

2005

Foelsche, U., A. Gobiet, **A. K. Steiner**, G. Kirchengast, M. Borsche, B. Pirscher B. C. Lackner, T. Schmidt, and J. Wickert (poster), Towards benchmark climatologies of the global atmosphere with radio occultation data from CHAMP, *Eos Trans. AGU, 86(52), Fall Meet. Suppl., Abstract U21A-0807, American Geophysical Union (AGU) Fall Meeting 2005*, San Francisco, CA, USA, December 2005.

Borsche M., A. Gobiet, **A. K. Steiner**, U. Foelsche, G. Kirchengast, T. Schmidt, and J. Wickert (poster), Tropical tropopause variability from three years of CHAMP radio occultation data, *Summer School Cargese*, Korsika, October 2005.

Gobiet, A., G. Kirchengast, U. Foelsche, **A. K. Steiner**, M. Borsche, J. Wickert, Monitoring climate change: Climate benchmark measurements from space and CHAMP climatology results, *19th GRAS-SAG Meeting*, EUMETSAT, Darmstadt, Germany, July 2005.

Foelsche, U., A. Gobiet, **A. K. Steiner**, G. Kirchengast, M. Borsche, J. Wickert (poster), CHAMPCLIM: Observing climate with CHAMP radio occultation data, *Geophysical Research Abstracts, Vol. 7, 04856, EGU General Assembly 2005*, Vienna, Austria, April 2005.

Gobiet, A., U. Foelsche, **A. K. Steiner**, M. Borsche, G. Kirchengast, J. Wickert, Validation of stratospheric temperatures in ECMWF analyses with CHAMP radio occultation climatologies, *Geophysical Research Abstracts, Vol. 7, 09047, EGU General Assembly 2005*, Vienna, Austria, April 2005.

Borsche, M., U. Foelsche, G. Kirchengast, A. Gobiet, and **A. K. Steiner**, Global climate monitoring with radio occultation data: The CHAMPCLIM project, *65. Jahrestagung der Deutschen Geophysikalischen Gesellschaft*, Graz, Austria, Februar 2005.

2004

Foelsche, U., A. Gobiet, **A. K. Steiner**, G. Kirchengast, M. Borsche, T. Schmidt, and J. Wickert, Climate monitoring with CHAMP radio occultation data: The CAMPCLIM project, *Eos Trans. AGU*, 85(47), Fall Meet. Suppl., Abstract SF53A-0728, *AGU Fall Meeting 2004*, San Francisco, CA, USA, December 2004.

Gobiet, A., **A. K. Steiner**, U. Foelsche, and G. Kirchengast (invited), Radio occultation data processing advancements for optimizing climate utility: Stratospheric retrieval advances, *CHAMPCLIM-Part 1 Final Presentation Meeting*, ASA/FFG, Vienna, Austria, November 2004.

Foelsche, U., A. Gobiet, **A. K. Steiner**, G. Kirchengast, M. Borsche, T. Schmidt, J. Wickert, Global climatologies based on radio occultation data: The CHAMPCLIM project, *2nd Int'l Workshop on Occultations for Probing Atmosphere and Climate (OPAC-2)*, Graz, Austria, September 2004.

Foelsche, U., G. Kirchengast, **A. K. Steiner**, L. Kornblueh and E. Manzini (poster), Testing the climate change monitoring utility of GNSS occultations by long-term simulations, *2nd Int'l Workshop on Occultations for Probing Atmosphere and Climate (OPAC-2)*, Graz, Austria, September 2004.

Borsche, M., A. Gobiet, **A. K. Steiner**, U. Foelsche, G. Kirchengast, T. Schmidt and J. Wickert (poster), Pre-operational retrieval of radio occultation based climatologies within the CHAMPCLIM project, *2nd Int'l Workshop on Occultations for Probing Atmosphere and Climate (OPAC-2)*, Graz, Austria, September 2004.

Gobiet, A., U. Foelsche, **A. K. Steiner**, M. Borsche, T. Schmidt, A. Löscher, G. Kirchengast and J. Wickert, Radio occultation based climatologies: Status of the CHAMPCLIM project and first results from the summer season 2003, *Joint CHAMP/GRACE Science Meeting GFZ*, Potsdam, Germany, July 2004.

Foelsche, U., G. Kirchengast, **A. K. Steiner**, L. Kornblueh, and E. Manzini (poster), Monitoring climate change with GNSS occultations: A 25-year (2001-2025) simulation study, *1st International CLIVAR Conference*, Baltimore, MD, USA, Juni 2004.

Foelsche, U., G. Kirchengast, **A. K. Steiner**, L. Kornblueh, and E. Manzini, Monitoring climate with small constellations of GNSS receivers: A simulation study, *ROCSAT3/COSMIC Radio Occultation Science Workshop (II)*, Lung Tan, Taiwan, May 2004.

Foelsche, U., G. Kirchengast, A. Gobiet, **A. K. Steiner**, A. Löscher, M. Borsche, J. Wickert, and T. Schmidt, Das CHAMPCLIM Projekt - Klimabeobachtung mit Satelliten, *8. Österreichischer Klimatag*, Universität für Bodenkultur, Vienna, Austria, April 2004.

Kirchengast, G., U. Foelsche, **A. K. Steiner**, L. Kornblueh, E. Manzini, Climate change monitoring by GNSS occultation: A 25-year (2001-2025) simulation study on temperature trend detection, *Geophysical Research Abstracts*, Vol. 6, 05127, *EGU General Assembly 2004*, Vienna, Austria, April 2004.

2003

Foelsche U., A. Gobiet, A. Löscher, G. Kirchengast, **A. K. Steiner**, J. Wickert, and T. Schmidt (poster), The CHAMPCLIM project: An overview, *2nd CHAMP science meeting*, Potsdam, Germany, September 2003.

Foelsche, U., G. Kirchengast, **A. K. Steiner**, and A. Gobiet (poster), Observing climate change with the radio occultation technique: From simulation studies to satellite constellations, *30th International Symposium on Remote Sensing of the Environment*, Honolulu, Hawaii, USA, November 2003.

Wickert J., A. Gobiet, G. Beyerle, **A. K. Steiner**, G. Kirchengast, U. Foelsche, and T. Schmidt, GPS radio occultation with CHAMP: Comparison of atmospheric profiles from GFZ Potsdam and IGAM Graz, *2nd CHAMP science meeting*, Potsdam, Germany, September 2003.

Kirchengast, G., U. Foelsche, **A. K. Steiner**, A. Gobiet, Watching climate change: Towards global climate monitoring using GPS occultation data from CHAMP and SAC-C, *23rd General Assembly of the International Union of Geodesy and Geophysics (IUGG)*, Sapporo, Japan, July 2003.

Kirchengast, G., and the EGOPS Development Team (J. Ramsauer, J. Fritzer, W. Poetzi, **A. Steiner**, U. Foelsche, P. Silvestrin, S. Syndergaard, M. Gorbunov, G. Larsen, K. Schultz, L. Kornblueh, H. Reichinger, S. Healy, S. Schweitzer, A. Gobiet, M. Schwaerz, M. Lohmann, A. Nielsen, L. Olsen, P. Eriksson, L. Gradinarsky, T. Kuhn, C. Melsheimer, S. Leroy, et al.) (invited), The end-to-end occultation sounding simulator EGOPS - from EGOPS4 to EGOPS5, *Mid-Term Review Meeting of the ESA ACE+ Phase A Sci. Support (ACEPASS) Study on LEO-LEO occultation characteriz.*, ESA/ESTEC, Noordwijk, NL, May 2003.

2002

Foelsche, U., G. Kirchengast, **A. K. Steiner**, A. Gobiet, A. Löscher, C. Bichler, J. Wickert, G. Beyerle, L. Kornblueh, M. Gorbunov, S. Syndergaard, and A. Hauchecorne (invited), Global climate monitoring based on CHAMP/GPS radio occultation data, *1st CHAMP Science Meeting*, Potsdam, Germany, January 2002.

Kirchengast, G., W. Pötzi, J. Ramsauer, J. Fritzer, **A. K. Steiner**, P. Silvestrin, S. Syndergaard, M. Gorbunov, G. B. Larsen, K. Schultz, L. Kornblueh, H. Reichinger, and S. Healy (invited), The End-to-end GNSS Occultation Performance Simulator version 4 (EGOPS4): Overview, exemplary applications, and future avenues, *Int'l Presentation Meeting of the ESA EGOPS Extension Study*, ESA/ESTEC, Noordwijk, Netherlands, March 2002.

Gobiet, A., G. Kirchengast, U. Foelsche, **A. K. Steiner**, and A. Löscher, Advancements of GNSS occultation retrieval in the stratosphere for climate monitoring, *2002 EUMETSAT Meteorol. Satellite Data Users Conference*, Dublin, Ireland, September 2002.

Foelsche, U., G. Kirchengast, **A. K. Steiner** (invited), Klimawandel-Monitoring mit satellitengetragenen GNSS Okkultationssensoren, *7tes Österr. Klimakolloquium, Univ. f. Bodenkultur*, Vienna, Austria, March 2002.

2001

Foelsche, U., G. Kirchengast, **A. K. Steiner**, L. Kornblueh, E. Manzini, and L. Bengtsson, Error analysis for climate change monitoring by GNSS occultation sensors, *Geophysical Research Abstracts*, Vol. 3, *26th Gen. Assembly of the Europ. Geophys. Society (EGS)*, Nice, France, March 2001.

Kirchengast, G., W. Pötzi, J. Ramsauer, **A. K. Steiner**, S. Syndergaard, M. Gorbunov, G.B. Larsen, K. Schultz, H. Reichinger, and P. Silvestrin, EGOPS4 - An end-to-end simulator for atmospheric sounding based on GNSS signals, *26th Gen. Assembly of the Europ. Geophys. Society (EGS)*, Nice, France, March 2001.

Kirchengast, G., **A. K. Steiner**, U. Foelsche, L. Kornblueh, E. Manzini, and L. Bengtsson (invited), Climate change monitoring by GNSS occultation: An observing system simulation experiment, *American Geophys. Union (AGU) 2001 Spring Meeting*, Boston, MA, USA, May 2001.

Foelsche, U., G. Kirchengast, **A. K. Steiner**, L. Kornblueh, E. Manzini, and L. Bengtsson (poster), Klimawandel-Monitoring mit satellitengetragenen GNSS Okkultationssensoren, *DACH (deutsch-österr.-schweiz.) Meteorologentagung 2001*, Vienna, Austria, September 2001.

2000

Kirchengast, G., **A. K. Steiner**, U. Foelsche, L. Kornblueh, E. Manzini, and L. Bengtsson, Spaceborne climate change monitoring by GNSS occultation sensors, *11th Symp. on Global Change Studies*, American Met. Society (AMS) 2000 Annual Meeting, Long Beach, CA, USA, January 2000.

Kirchengast, G., W. Pötzi, J. Ramsauer, A. Veronig, M. Gorbunov, G. Holler, **A. K. Steiner**, S. Syndergaard, G.B. Larsen, P. Hoeg, P. Silvestrin, and A. Tobias (invited), The End-to-end GNSS Occultation Performance Simulator (EGOPS) version 3, *2nd Int'l Seminar on Radio Occultation with GNSS*, ESA/ESTEC, Noordwijk, Netherlands, January 2000.

Kirchengast, G., **A. K. Steiner**, U. Foelsche, L. Kornblueh, E. Manzini, and L. Bengtsson, A climate monitoring observing system simulation experiment with GNSS radio occultation data, *2nd Int'l Seminar on Radio Occultation with GNSS*, ESA/ESTEC, Noordwijk, Netherlands, January 2000.

1999

Kirchengast, G., **A. K. Steiner**, U. Foelsche, L. Kornblueh, E. Manzini, and L. Bengtsson, GNSS occultation sounding for climate monitoring and atmospheric change analysis, *22nd General Assembly of the International Union of Geodesy and Geophysics (IUGG)*, Birmingham, U.K., July 1999.

Kirchengast, G., **A. K. Steiner**, L. Kornblueh, E. Manzini, and L. Bengtsson, GNSS occultation sounding for climate monitoring and atmospheric change analysis, *26th Gen. Assembly of the Int'l Union of Radio Science (URSI)*, Toronto, Canada, August 1999.

1998

Kirchengast, G., J. Ramsauer, W. Mühlmann, G. Holler, K. Holler, W. Rothleitner, K. Hocke, **A. K. Steiner**, U. Foelsche, K. Schultz, D. Hansen, L. Maresi, S. Syndergaard, M. Mortensen, P. Hoeg, P. Silvestrin, J. Fuchs, and A. Tobias (invited), The End-to-end GNSS Occultation Performance Simulator EGOPS – Overview and exemplary applications, *1st Int'l Seminar on Atmospheric Sounding by Radio Occultation*, ESA/ESTEC, Noordwijk, Netherlands, January 1998.

Kirchengast, G., R. Leitinger, K. Hocke, **A. K. Steiner**, H.-P. Ladreiter, and W. Rothleitner, Ionospheric corrections and ionospheric applications of radio occultation data, *1st Int'l Seminar on Atmospheric Sounding by Radio Occultation*, ESA/ESTEC, Noordwijk, Netherlands, January 1998.

Kirchengast, G., J. Ramsauer, W. Mühlmann, G. Holler, K. Holler, W. Rothleitner, K. Hocke, **A. K. Steiner**, U. Foelsche, K. Schultz, D. Hansen, L. Maresi, S. Syndergaard, M. Mortensen, P. Hoeg, P. Silvestrin, J. Fuchs, and A. Tobias, An end-to-end occultation sounding simulator: Overview and exemplary results, *23rd Gen. Assembly of the Europ. Geophys. Society (EGS)*, Nice, France, April 1998.

1997

Kirchengast, G., and **A. K. Steiner**, Methods for ionospheric correction of GNSS occultation data under adverse conditions, *Joint Progress Meeting of the ESA Studies on Atmospheric Sounding using GNSS Occultation*, ESA/ESTEC, Noordwijk, Netherlands, January 1997.

Kirchengast, G., J. Ramsauer, W. Mühlmann, G. Holler, K. Holler, K. Hocke, **A. K. Steiner**, U. Foelsche, K. Schultz, L. Maresi, S. Syndergaard, M. Mortensen, P. Hoeg, P. Silvestrin, and A. Tobias, End-to-end GNSS occultation performance simulation, *22nd Gen. Assembly of the Europ. Geophys. Society (EGS)*, Vienna, Austria, April 1997.

Hocke, K., G. Kirchengast, and **A. K. Steiner** (poster), Inversion of GPS/MET data – problems and solutions, *22nd Gen. Assembly of the Europ. Geophys. Society (EGS)*, Vienna, Austria, April 1997.