Conveners
Terry Deshler
University of Wyoming

Larry Thomason
NASA Langley Research Center

Mian Chin
NASA Goddard Space Flight Center

Program Committee
Emilio Cuevas-Agulló
Izana Atmospheric Research Center

Christine Bingen
Royal Belgian Institute for Space Aeronomy

Markus Hermann
Leibniz Institute for Tropospheric Research

Marc von Hobe
Forschungszentrum Jülich

Stefanie Kremser
Bodeker Scientific

Markus Rex
Alfred Wegner Institute Helmholtz-Zentrum für Polar und Meeresforschung

Alan Robock
Rutgers University

Claudia Timmreck
Max-Planck Institute for Meteorology

Jean-Paul Vernier
NASA Langley Research Center

Local Host
Emilio Cuevas-Agulló
Izana Atmospheric Research Center
Scientific Program

SUNDAY, MARCH 18

5:00 p.m. – 6:45 p.m. **Ice Breaker Reception**
Grand Teide Ballroom

MONDAY, MARCH 19

8:30 a.m. – 9:00 a.m. **Introductions and Welcome**
Presiding: Terry Deshler
Convener: Emilio Cuevas-Agullo
Location: Salon Vilaflor

9:00 a.m. – 10:30 a.m. **Stratospheric Aerosol Record**
Presiding: Markus Hermann
Convener: Jean-Paul Vernier
Salon Vilaflor

9:00 a.m. – 9:30 a.m. Christian von Savigny | **Comparison of stratospheric aerosol measurements in the post-Pinatubo era from different satellite platforms (Invited)**

9:30 a.m. – 9:45 a.m. Ghassan Taha | **Validation of OMPS Limb Profiler Stratospheric Aerosol Measurements**

9:45 a.m. – 10:00 a.m. Katie Foster | **In-Situ Stratospheric Size Distribution Measurements from 2006 – 2015: comparisons with OSIRIS and OMPS extinction products**

10:00 a.m. – 10:15 a.m. Landon A Rieger | **Extending the stratospheric aerosol record with OMPS-LP measurements**

10:15 a.m. – 10:30 a.m. Christine Bingen | **Stratospheric aerosol data records for the ESA Climate Change Initiative (CCI) and beyond**

10:30 a.m. – 11:00 a.m. **AM Break**

11:00 a.m. – 1:00 p.m. **Aerosol in the Upper Troposphere Lower Stratosphere**
Presiding: Markus Hermann
Convener: Jean-Paul Vernier
Salon Vilaflor

11:00 a.m. – 11:15 a.m. Markus Rex | Initial results from the StratoClim aircraft campaign in the Asian Monsoon in summer 2017

11:15 a.m. – 11:30 a.m. Suvarna Fadnavis | Asian Tropopause Aerosol Layer (ATAL) during El Niño: Impact on the Indian summer monsoon

11:30 a.m. – 11:45 a.m. Markus Hermann | Influence of Stratospheric-Tropospheric Exchange on Aerosol Particle Concentrations in the UT/LMS - a Statistical Analysis of Aircraft Data from the IAGOS-CARIBIC Observatory

11:45 p.m. – 12:00 p.m. Mian Chin | Natural and Anthropogenic Aerosols in the UTLS in Recent Decade: Sources and the Role of Monsoon Transport

12:00 p.m. – 12:30 p.m. Nickolay Anatoly Krotkov | Satellite retrievals of volcanic and anthropogenic SO$_2$ emissions (Invited)

12:30 p.m. – 12:45 p.m. Review of the schedule for afternoon formal/informal group discussions

1:00 p.m. – 6:00 p.m. Lunch and formal/informal group discussions

2:00 p.m. – 4:00 p.m. Early Career Researchers - Salon Vilaflor

7:00 p.m. – 8:00 p.m. Keynote: Stephan Borrmann - The Tropical Upper Troposphere and Lower Stratosphere: Source Region for Stratospheric Aerosols

Presiding: Markus Hermann
Convener: Jean-Paul Vernier
Salon Vilaflor

8:00 p.m. – 10:00 p.m. Chapman Conference Posters – Satellite and Other Measurements

Presiding: Terry Deshler
Conveners: Larry Thomason and Mian Chin

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P-1 Elizaveta Malinina | Aerosol particle size distribution parameters and extinction coefficients from SCIAMACHY Limb measurements

P-2 Johan Friberg | Aircraft and satellite-based studies of stratospheric aerosol – composition, sources and climate forcing

P-3 Elisa Carboni | Retrievals of sulfur species from IASI measurements
Jean-Paul Vernier | A decade of stratospheric aerosol observations by the CALIPSO space-borne lidar

Terry Deshler | The stratospheric sulfur burden: an assessment based on gas and particle phase measurements

Kevin R Leavor | Early Observations of Aerosols from the SAGE III ISS Instrument

Mahesh Kovilakam | Revisiting Stratospheric aerosol climatology for the post-SAGEII era using space-based measurements

Michael D Fromm | Sulfates From the Get-Go in Stratospheric Volcanic Eruptions Big and Small

Michael D Fromm | Stratospheric Smoke to Rival Sulfate: the pyroCb Plume of 2017

John Edward Barnes | Constraining aerosol properties with ground-based lidar and other remote sensing techniques

Stefanie Kremser | New carbonyl sulfide measurements in the Southern Ocean

Catherine Wilka | Sensitivity of Heterogeneous Chlorine Chemistry on Sulfate Aerosols in the Tropical Stratosphere

TUESDAY, MARCH 20

9:00 a.m.–10:30 a.m. | Stratospheric Aerosol from Non-Sulfate Sources
Presiding: Christine Bingen
Conveners: Marc von Hobe
Salon Vilaflor

9:00 a.m.–9:30 a.m. | Ralf Weigel | Presence and potential impacts of meteoritic aerosol material in the stratosphere (Invited)

9:30 a.m.–9:45 a.m. | Sergey Khaykin | Non-Volcanic Contributors To Stratospheric Aerosol Load At Northern Midlatitudes: A Multi-Platform Perspective On Asian Pollution And Forest Fires

9:45 a.m.–10:00 a.m. | Omar Torres | Stratospheric Injection of Massive Smoke Plume from Canadian Boreal Fires in 2017 as seen by DSCOVR-EPIC and OMPS-LP Observations
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<th>Time</th>
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<td>10:00 a.m. – 10:15 a.m.</td>
<td>Margaret A Tolbert</td>
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<td>10:15 a.m. – 10:30 a.m.</td>
<td>Graham W Mann</td>
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<td>10:30 a.m. – 11:00 a.m.</td>
<td>AM Break</td>
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<td>11:00 a.m. – 12:30 p.m.</td>
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<td>Salon Vilaflor</td>
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<td>11:00 a.m. – 11:30 a.m.</td>
<td>Michael Hoepfner</td>
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<td>11:30 a.m. – 11:45 a.m.</td>
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<td>11:45 a.m. – 12:00 p.m.</td>
<td>Kirstin Krüger</td>
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<td>12:00 p.m. – 12:15 p.m.</td>
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<td>12:30 p.m. – 6:00 p.m.</td>
<td>Lunch and formal/informal group discussions</td>
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<td>2:00 p.m. – 3:00 p.m.</td>
<td>Future of SSiRC - Salon Vilaflor</td>
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<td>7:00 p.m. – 8:00 p.m.</td>
<td>Keynote: Marc von Hobe - Do we understand the sources of stratospheric sulfur?</td>
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<td>Salon Vilaflor</td>
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<td>8:00 p.m. – 10:00 p.m.</td>
<td>Chapman Conference Posters – Other Measurements (con't) and UTLS</td>
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P-13  **Terry Deshler** | Retrieval of aerosol size distributions from in situ particle counter measurements accounting for instrument counting efficiency, and comparisons with satellite measurements of extinction and estimates of aerosol surface area.

P-14  **Marcellinus Snels** | Lidar measurement of thin cirrus and aerosol at Palau Island (7°N 134°E)

P-15  **Marcellinus Snels** | Statistical study of polar stratospheric clouds observations by ground- and satellite based lidars and relevance for chemistry climate models

P-16  **Michael C Pitts** | Polar Stratospheric Cloud and Aerosol Climatology Based on CALIOP Measurements From 2006-2017

P-17  **Amit K Pandit** | Impact of Increased Aerosol Load on Mid-latitude Cirrus Clouds

P-18  **Paul Lawson** | Large (1-10 Micron) Particles Observed In Situ in the Tropical Western Pacific Lower Stratosphere During the ATTREX Campaign

P-19  **Thomas Duncan Fairlie** | Characterizing the Asian Tropopause Aerosol Layer using in situ balloon measurements, satellite observations and a chemical transport model

P-20  **Hazel Vernier** | Chemical Composition of the Asian Tropopause Aerosol Layer

P-21  **Christoph Bruehl** | Model simulated and satellite observed aerosols in the UTLS with a focus on non-sulfate particles

P-22  **Beiping Luo** | How do stratospheric sulfate and meteoritic aerosols affect cirrus clouds and PSCs and their dehydration potential?

P-23  **Igor Appel** | Influence of processes in stratosphere upon the temperature at the tropopause and below

**WEDNESDAY, MARCH 21**

8:30 a.m.– 7:30 p.m.  **Field trip to Teide National Park and Izana Observatory**

Presiding: Terry Deshler
Conveners: Emilio Cuevas-Agullo
THURSDAY, MARCH 22

9:00 a.m.–10:30 a.m. **Stratospheric Aerosol Climatologies**
Presiding: Alan Robock
Conveners: Larry Thomason
Salon Vilaflor

9:00 a.m.–9:30 a.m. **Thomas Peter** | *The Basis and Development of the CMIP6 Stratospheric Aerosol Record (Invited)*

9:30 a.m.–9:45 a.m. **Larry Willis Thomason** | Inferring aerosol properties from space-based measurements: An alternative to direct retrieval

9:45 a.m.–10:00 a.m. **Sabine Griessbach** | Measuring and Simulating Particulate Matter in the Upper Troposphere and Lower Stratosphere (UTLS)

10:00 a.m.–10:15 a.m. **Laura E. Revell** | Impacts of Mt. Pinatubo volcanic aerosol on the tropical stratosphere in chemistry-climate model simulations using CCMi and CMIP6 stratospheric aerosol data.

10:15 a.m.–10:30 a.m. **Pawan K Bhartia** | Improving the Performance of the OMPS Limb Profiling Instrument in Monitoring Aerosols in the Post-Pinatubo Stratosphere

10:30 a.m.–11:00 a.m. **AM Break**

11:00 a.m.–12:30 p.m. **Stratospheric Aerosol and Climate - Forcing**
Presiding: Alan Robock
Conveners: Larry Thomason
Salon Vilaflor

11:00 a.m.–11:30 a.m. **Mike Mills** | *Global volcanic aerosol properties and volcanic forcing of global climate change since 1990 (Invited)*

11:30 a.m.–11:45 a.m. **Jennifer Schallock** | Model simulations of stratospheric aerosols from volcanic eruptions and their radiative forcing

11:45 a.m.–12:00 p.m. **Sergey Osipov** | The effects of SO$_2$, volcanic ash and sulfate aerosols on photolysis rates and the sulfate chemical production following the volcanic eruptions

12:00 p.m.–12:15 p.m. **Lauren Marshall** | Investigating the Radiative Forcing from Volcanic Eruptions Using Statistical Emulation
12:15 p.m. – 12:30 p.m. | **Valentina Aquila** | Changes in Upper Troposphere/Lower Stratosphere Aerosol Since 1980 in the Goddard Earth Observing System (GEOS-5) Model

12:30 p.m. – 6:00 p.m. | Lunch and formal/informal group discussions

2:00 p.m. – 4:00 p.m. | **Volcanic response plan**
Salon Vilaflor

6:00 p.m. – 7:00 p.m. | **Conference Banquet - Tenerife**

7:00 p.m. – 8:00 p.m. | **Keynote: Matthias Dörries**| *Stratospheric science and the Cold War*
Presiding: Alan Robock
Conveners: Larry Thomason
Salon Vilaflor

8:00 p.m. – 10:00 p.m. | **Chapman Conference Posters – Models and Future Measurements**
Presiding: Terry Deshler
Conveners: Larry Thomason and Mian Chin
Iriarte

P-24 | **Daniele Visioni** | Stratospheric sulfate aerosol microphysics in QBO regimes under different scenarios of sulfate geoengineering

P-25 | **Daniele Visioni** | Stratospheric aerosols from major volcanic eruptions: QBO impact on the aerosol cloud dispersal and optical depth

P-26 | **Ulrike Niemeier** | Impact of the QBO phases on transport of sulfate aerosols in the stratosphere

P-27 | **Timofei Sukhodolov** | Size-Resolved Stratospheric Aerosol Distributions after Pinatubo Derived from a Coupled Aerosol-Chemistry-Climate Model

P-28 | **Georgiy Stenchikov** | Calculating the Self-Consistent Vertical Structure of a Multicomponent Stratospheric Volcanic Plume in a Fine-Resolution Regional Model

P-29 | **Thomas Jacques Aubry** | Recent improvements of 1D models of volcanic plume rise: Implications for characterizing sulfur emissions by explosive volcanic eruptions and the subsequent sulfate aerosol forcing.

P-30 | **Ralph Lehmann** | Model calculations of the contribution of tropospheric SO₂ to the stratospheric aerosol layer

Claudia Timmreck | The Interactive Stratospheric Aerosol Model Intercomparison Project (ISA-MIP)

James Douglas Goetz | Stratéole 2: Long Duration Measurements of Aerosol Profiles in the TTL using the Reeldown Aerosol, Clouds, Humidity, and Temperature Sensor (RACHuTS) and LASP Optical Particle Counter (LOPC)

Kirstin Krüger | Are We Ready for the Next Big Sulfur- and Halogen-rich Eruption in the Tropics?

Matthew D. Brown | Advancing High-Altitude Observation through the Development of an Upper Tropospheric, Lower Stratospheric Aerosol Measurement Package (UTLS-AMP)

Alan Robock | Balloon observatories needed for future volcanic eruption observations

Juan-Carlos Antuna-Marrero | One step further in the objectives of LALINET: preparation for the next major volcanic eruption and validations of the UTLS aerosols measurements from EarthCare and Sage III satellite missions.

FRIDAY, MARCH 23

9:00 a.m.– 10:30 a.m. Stratospheric Aerosol and Climate – Climate Response
Presiding: Mian Chin
Conveners: Claudia Timmreck and Stefanie Kremser
Salon Vilaflor

9:00 a.m. –9:30 a.m. Benjamin D Santer | Identifying the Climate Signals of Early 21st Century Volcanic Eruptions (Invited)

9:30 a.m. –9:45 a.m. Evgeniya Predybaylo | Testing the stratospheric radiative heating and surface cooling caused by volcanic aerosols in models with prescribed and interactive volcanic plumes

9:45 a.m. –10:00 a.m. Susanne Bauer | Interactive historical volcanic emissions, effects on chemistry and climate
10:00 a.m. –10:15 a.m.  **Mohamadou Diallo** | Significant contributions of volcanic aerosols to decadal changes in the stratospheric circulation

10:15 a.m. –10:30 a.m.  **Brian Zambri** | Volcanic Eruptions as the Cause of the Little Ice Age

10:30 a.m. – 11:00 a.m.  **AM Break**

**Stratospheric Aerosol and the Future Climate**

11:00 a.m.– 12:30 p.m.  
Presiding: Mian Chin

Conveners: Stefanie Kremser and Claudia Timmreck

Salon Vilaflor

11:00 a.m.–11:30 a.m.  **Owen Brian Toon** | *The Impact of Future Climate Changes on Stratospheric Aerosols (Invited)*

11:30 a.m.–11:45 a.m.  **Thomas Jacques Aubry** | Eruption plume height and its impact on volcanic forcing: towards more realistic forcing reconstructions and scenarios for future climate projections

11:45 a.m.–12:00 p.m.  **Claudia Timmreck** | Climate impact of a hypothetical Mt. Agung like eruption in boreal autumn 2017

12:00 p.m.–12:15 p.m.  **Lars Kalnajs** | In Situ Measurements Of Stratospheric Aerosol Size Distributions During The Post Pinatubo Period And In Preparation For The Next Major Volcanic Eruption.

12:15 p.m.–12:30 p.m.  **Joshua Kennedy** | Ice Core Evidence of Recent Volcanic Contribution to Stratospheric Aerosols

12:30 p.m. – 1:30 p.m.  **Lunch**

1:30 p.m.– 2:30 p.m.  **Keynote: Michael Sigl** - Shedding Light on Earth's Volcanic Past Using Arrays of Ice Cores: How Common is Present-Day Volcanic Activity in a Multi-Millennial Context?

Presiding: Mian Chin

Convener(s): Claudia Timmreck, Stefanie Kremser

Salon Vilaflor

2:30 p.m. – 3:00 p.m.  **PM Break**

3:00 p.m.– 5:00 p.m.  **Reports from rapporteurs/Discussion of outstanding scientific questions**

Presiding: Terry Deshler
The organizers of this conference would like to thank the US National Science Foundation, the US National Aeronautics and Space Administration, and the Atmospheric Sciences Section of the AGU for their generous support. NSF is providing travel support for the conference. LASP and SSAI are providing support through the distribution and administration of the travel awards.