Daniele Visioni

Curriculum Vitae

Education and Training

2020-2021 **Postdoc Leadership Program**, *Cornell University*, Ithaca.

Nov 2015-Oct 2018 **PhD with Honours in Atmospheric Physics and Chemistry**, *University of L'Aquila*, L'Aquila.
Thesis: A climate engineering technique for a warming planet: stratospheric sulfur injection as a temporary solution to greenhouse gases increase.

2013-2015 **Master Degree in Physics**, *University of L'Aquila*, *Under a two-year GSSI Excellence Scolarship, 110/110*, Curriculum in Atmospheric Physics.

2009-2013 **Bachelor Degree in Physics**, *University of L'Aquila*, L'Aquila, *102/110*.

Professional appointments

Nov 2021 **Research Associate**, *Cornell University - Sibley School of Mechanical and Aerospace Engineering*, Ithaca (NY), USA, Supervisor: prof. Douglas MacMartin.

Nov 2018-Oct 2021 **Post-doctoral Associate**, *Cornell University - Sibley School of Mechanical and Aerospace Engineering*, Ithaca (NY), USA, Supervisor: prof. Douglas MacMartin.

Nov 2015-Oct 2018 **Ph.D. Fellow in Atmospheric Physics and Chemistry**, *University of L'Aquila*, Italy, Supervisor: prof. Giovanni Pitari.

Jan-Mar 2018 **Visiting Scientist**, *NCAR*, Boulder (CO), USA, Supervisor: dr. Simone Tilmes.

June-Sep 2017 **Visiting Scientist**, *NASA GSFC - Earth Science Division*, Greenbelt (MD), USA, Supervisor: prof. Valentina Aquila.

Teaching and mentoring activities

August 2020 **External examiner for PhD degree, Cambridge University** .
Candidate: John Staunton Sykes, Faculty of Physics & Chemistry

Sept 2020-Current **LeadTheFuture STEM Mentorship Program**, *LeadTheFuture*.
Mentoring Italian Bachelor and Master students in STEM programs

Aug 2019-Current **GSMU Mentorship Program**, Cornell University.
Mentoring first generation college students with an interest in pursuing a PhD

2017,2018 **Lecturer**, *Magnetism and Electricity Lab, General physics, Atmospheric radiative transfer*, Department of Physical and Chemical Sciences, University of L'Aquila.

Research Support Grants

2020-2021 **Assisted in the writing of multiple grants**.
As a Postdoctoral Associate, I was not allowed to write my own proposals or to participate as PI to most proposals, as per internal Cornell rules. I have however assisted in the writing of various grants for private philanthropic groups, NSF, NOAA and NCAR.

2020 **SilverLining Safe Climate Research Initiative**, *GAUSS: Geoengineering Assessment across Uncertainty, Scenarios, and Strategies*, Awarded, PI: D.G. MacMartin.

2020 **NCAR Large University Allocation**, *Fundamental limits and trade-offs of stratospheric aerosol geoengineering*, Awarded, 14,700,000.0 Core-hours, PI: D.G. MacMartin.

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2020 **NSF Award CBET-2038246**, *Fundamental limits and trade-offs of stratospheric aerosol geoengineering*, Awarded, PI: D.G. MacMartin; co-PI: B. Kravitz.

2020 **NSF Growing Convergence Research Proposal**, *Risks, Impacts and Risk Reduction for Solar Radiation Modification on Biodiversity on the Indian Subcontinent*, Pending, Multiple PIs; invited to participated as Senior Personnel.

2020 **NSF Growing Convergence Research Proposal**, *Geoengineering responses to climate change: Convergence of Human and Earth System Sciences (CHESS)*, Pending, Multiple PIs; invited to participated as Senior Personnel.

Scholarships and Awards

May 2021 **Select to participate to ACCESS XVI - Atmospheric Chemistry Colloquium for Emerging Senior Scientists**.

Nov 2015-Oct 2018 **Ph.D. scholarship from the Italian Ministry of Education, University, and Research**, First ranked among the candidates in Physics and Chemistry at the University of L'Aquila.

Professional Activities and Scientific Leadership

March 2021-Ongoing **Solar Radiation Management Governance Initiative**, *Research Collaborator*.
External Advisor for two research teams awarded by SRMGI

March 2021-Ongoing **WMO - Scientific Assessment of Ozone Depletion 2022**, *Co-author*.
Leading Section 3 - "Dynamical and Chemical changes" on Chapter 6: Stratospheric aerosol intervention and its potential effect on the stratospheric ozone layer

Feb 2021-Ongoing **NCAR HPC User Group Advisor**, *National Center for Atmospheric Research*, `https://www2.cisl.ucar.edu/user-support/ncar-hpc-user-group`.
High Performance Computing User Group Advisor at the Computational and Information Systems Lab

Dec 2020-Ongoing **EGUsphere Moderator**, *European Geophysical Union*, `www.egusphere.net/`.
Moderator for the not-for-profit scientific repository of the EGU, bringing together all preprints submitted to EGU journals.

Aug 2020-Ongoing **Project co-chair**, *Geoengineering Model Intercomparison Project*, `geomip.org`.
Coordinating modeling groups, devising modeling experiments, organizing GeoMIP meetings, liaising with WCRP and CMIP, as well as other external groups.

June 27-28, 2020* **Gordon Research Seminar on Climate Engineering**, *Co-chair*, Sunday River-Newry, ME, USA, **postponed to 2022 due to COVID-19*.

9-13 Dec 2019 **AGU Fall Meeting 2019**, *Session convener - Solar Geoengineering Benefits and Risks: Modeling, Impacts, Analogs, Engineering, Ethics, and Governance*, San Francisco, USA, Program here.

Aug 28-Sept 2, 2016 **ISSAOS 2016-Advanced Programming Techniques for the Earth System Science**, *Organising committee*, L'Aquila.

2017-Ongoing **Reviewer for Scientific Journals**, I am an active reviewer for various journals in the field of atmospheric physics and chemistry: Advances in Atmospheric Sciences (1), Atmosphere (10), Atmospheric Chemistry and Physics (9), Climate (2), Earth's Future (1), Earth-Science Reviews (2), Earth System Dynamics (1), Environmental Research Letters (1), Frotiers: Climate (1), Nature Communications (2), Journal of Geophysical Research: Atmosphere (8).

Publications

Under revision

1. 2021 **How large is the design space for stratospheric aerosol geoengineering?**, *Zhang, Y., MacMartin, D. G., **Visioni, D.**, and Kravitz, B.*, Earth Syst. Dynam. Discuss. [preprint], https://doi.org/10.5194/esd-2021-70, in review, 2021..

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2. 2021 **Potential limitations of using a modal aerosol approach for sulfate geoengineering applications in climate models**, ***Visioni, D.***, *Tilmes, S., Bardeen, C., Mills, M., MacMartin, D. G., Kravitz, B., and Richter, J. H.*, Atmos. Chem. Phys. Discuss. [preprint], https://doi.org/10.5194/acp-2021-678, in review, 2021..

3. 2021 **A Model Intercomparison of Stratospheric Solar Geoengineering by Accumulation-Mode Sulfate Aerosols**, *Weisenstein, D. K., **Visioni, D.**, Franke, H., Niemeier, U., Vattioni, S., Chiodo, G., Peter, T., and Keith, D. W.*, Atmos. Chem. Phys. Discuss. [preprint], https://doi.org/10.5194/acp-2021-569, in review, 2021..

4. 2021 **Dependency of the impacts of geoengineering on the stratospheric sulfur injection strategy part 1: Intercomparison of modal and sectional aerosol module**, *Laakso, A., Niemeier, U., **Visioni, D.**, Tilmes, S., and Kokkola, H.*, Atmos. Chem. Phys. Discuss. [preprint], https://doi.org/10.5194/acp-2021-526, in review, 2021..

Climate Engineering

1. 2021 **Identifying the sources of uncertainty in climate model simulations of solar radiation modification with the G6sulfur and G6solar Geoengineering Model Intercomparison Project (GeoMIP) simulations**, ***Visioni, D.***, *MacMartin, D. G., Kravitz, B., Boucher, O., Jones, A., Lurton, T., Martine, M., Mills, M. J., Nabat, P., Niemeier, U., Séférian, R., and Tilmes, S.*, Atmos. Chem. Phys., 21, 10039–10063, https://doi.org/10.5194/acp-21-10039-2021, 2021.

2. 2021 **Differences in the quasi-biennial oscillation response to stratospheric aerosol modification depending on injection strategy and species**, *Franke, H., Niemeier, U., **Visioni, D.***, Atmos. Chem. Phys., 21, 8615–8635; https://doi.org/10.5194/acp-21-8615-2021.

3. 2021 **High-latitude stratospheric aerosol geoengineering can be more effective if injection is limited to spring**, *Lee, W., MacMartin, D. G., **Visioni, D.**, Kravitz, B.*, Geophysical Research Letters, doi:10.1029/2021GL092696.

4. 2021 **Potential ecological impacts of climate intervention by reflecting sunlight to cool Earth**, *P. L. Zarnetske, J. Gurevitch, J. Franklin, P. M. Groffman, C. S. Harrison, J. J. Hellmann, Forrest M. Hoffman, S. Kothari, A. Robock, S. Tilmes, **D. Visioni**, J. Wu, L. Xia, C. Yang*, Proceedings of the National Academy of Sciences Apr 2021, 118 (15) e1921854118; DOI: 10.1073/pnas.1921854118.

5. 2021 **Comparing different generations of idealized solar geoengineering simulations in the Geoengineering Model Intercomparison Project (GeoMIP)**, *Kravitz, B., MacMartin, D. G., **Visioni, D.**, Boucher, O., Cole, J. N. S., Haywood, J., Jones, A., Lurton, T., Nabat, P., Niemeier, U., Robock, A., Séférian, R., and Tilmes, S.*, Atmos. Chem. Phys., 21, 4231–4247, https://doi.org/10.5194/acp-21-4231-2021, 2021.

6. 2021 **Is Turning Down the Sun a Good Proxy for Stratospheric Sulfate Geoengineering?**, ***Visioni, D.***, *MacMartin, D. G., Kravitz, B.*, Journal of Geophysical Research: Atmospheres, 126, 5, e2020JD033952. https://doi.org/10.1029/2020JD033952.

7. 2020 **Reduced poleward transport due to stratospheric heating under stratospheric aerosols geoengineering**, ***Visioni, D.***, *MacMartin, D. G., Kravitz, B., Lee, W., Simpson, I. R., and Richter, J. H.*, Geophysical Research Letters, 47, e2020GL088 337, doi:10.1029/2020GL089470, https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2020GL089470.

8. 2020 **Seasonally Modulated Stratospheric Aerosol Geoengineering Alters the Climate Outcomes**, ***Visioni, D.***, *MacMartin, D. G., Kravitz, B., Richter, J. H., Tilmes, S., and Mills, M. J.*, Geophysical Research Letters, 47, e2020GL088 337, doi:10.1029/2020GL088337, https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2020GL088337.

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9. 2020 **What goes up must come down: impacts of deposition in a sulfate geoengineering scenario**, ***Visioni, D.***, *Slessarev, E., MacMartin, D., Mahowald, N. M., Goodale, C. L., and Xia, L.*, Environmental Research Letters, 15(9), http://iopscience.iop.org/10.1088/1748-9326/ab94eb.

10. 2020 **Expanding the Design Space of Stratospheric Aerosol Geoengineering to Include Precipitation-Based Objectives and Explore Trade-offs**, *Lee, W., MacMartin, D. G.,* ***Visioni, D.****, Kravitz, B.*, Earth Syst. Dynam., 11, 1051–1072, https://doi.org/10.5194/esd-11-1051-2020.

11. 2019 **Seasonal Injection Strategies for Stratospheric Aerosol Geoengineering**, ***Visioni, D.****, MacMartin, D. G., Kravitz, B., Tilmes, S., Mills, M. J., Richter, J. H., Boudreau, M.*, Geophysical Research Letters, 46, 7790-7799. https://doi.org/10.1029/2019GL083680.

12. 2019 **Stratospheric Sulfate Aerosol Geoengineering Could Alter the High Latitude Seasonal Cycle**, *Jiang, J., Cao, L., MacMartin, D. G., Simpson, I. R., Kravitz, B., Cheng, W.,* ***Visioni, D.****, Tilmes, S., Richter, J. H., Mills, M. J.*, Geophysical Research Letters, 46, 7790-7799. https://doi.org/10.1029/2019GL083680.

13. 2018 **Upper tropospheric ice sensitivity to sulfate geoengineering**, ***Visioni, D.****, Pitari, G., di Genova, G., Tilmes, S., and Cionni, I.*, Atmospheric Chemistry and Physics, 18, 14867-14887, https://doi.org/10.5194/acp-18-14867-2018.

14. 2018 **Sulfur deposition changes under sulfate geoengineering conditions: quasi-biennial oscillation effects on the transport and lifetime of stratospheric aerosols**, ***Visioni, D.****, Pitari, G., Tuccella, P., and Curci, G.*, Atmospheric Chemistry and Physics, 18, 2787-2808, doi:10.5194/acp-18-2787-2018, https://www.atmos-chem-phys.net/18/2787/2018/.

15. 2017 **Sulfate Geoengineering Impact on Methane Transport and Lifetime: Results from the Geoengineering Model Intercomparison Project (GeoMIP)**, ***Visioni, D.****, Pitari, G., Aquila, V., Tilmes, S., Cionni, I., Di Genova, G., and Mancini, E.*, Atmospheric Chemistry and Physics, 17, 11 209-11 226, doi:10.5194/acp-17-11209-2017, https://www.atmos-chem-phys.net/17/11209/2017/.

16. 2017 **Sulfate geoengineering: a review of the factors controlling the needed injection of sulfur dioxide**, ***Visioni, D.****, Pitari, G., and Aquila, V.*, Atmospheric Chemistry and Physics, 17, 3879-3889, doi:10.5194/acp-17-3879-2017, 2017.

Climate policy

17. 2021 **From Moral Hazard to Risk-Response Feedback**, *J. Jebari, T.M. Andrews, V. Aquila, B. Beckage, M. Belaia, M. Clifford, J. Fuhrman,D.P. Keller, K.J. Mach, D.R. Morrow, K.T. Raimi,* ***D. Visioni****, S. Nicholson, C.H. Trisos*, Climate Risk Management, 100324, https://doi.org/10.1016/j.crm.2021.100324.

Effect of volcanic eruptions on climate

18. 2016 **Sulfate aerosols from non-explosive volcanoes: Chemical- radiative effects in the troposphere and lower stratosphere**, *Pitari, G.,* ***Visioni, D.****, Mancini, E., Cionni, I., Di Genova, G., and Gandolfi, I.*, Atmosphere, 7, doi:10.3390/atmos7070085.

19. 2016 **Stratospheric aerosols from major volcanic eruptions: A composition-climate model study of the aerosol cloud dispersal and e-folding time**, *Pitari, G., Genova, G. D. G., Mancini, E.,* ***Visioni, D.****, Gandolfi, I., and Cionni, I.*, Atmosphere, 7, doi:10.3390/atmos7060075, 20.

20. 2016 **Impact of stratospheric volcanic aerosols on age-of-air and transport of long-lived species**, *Pitari, G., Cionni, I., Di Genova, G.,* ***Visioni, D.****, Gandolfi, I., and Mancini, E*, Atmosphere 2016, 7(11), 149; https://doi.org/10.3390/atmos7110149.

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Atmospheric dynamics and composition

21. 2019 **Clear-sky ultraviolet radiation modelling using output from the Chemistry Climate Model Initiative**, *Lamy, K., Portafaix, T., Josse, B., Brogniez, C., Godin-Beekmann, S., Bencherif, H., Revell, L., Akiyoshi, H., Bekki, S., Hegglin, M. I., Jockel, P., Kirner, O., Liley, B., Marecal, V., Morgenstern, O., Stenke, A., Zeng, G., Abraham, N. L., Archibald, A. T., Butchart, N., Chipperfield, M. P., Di Genova, G., Deushi, M., Dhomse, S. S., Hu, R.-M., Kinnison, D., Kotkamp, M., McKenzie, R., Michou, M., O'Connor, F. M., Oman, L. D., Pitari, G., Plummer, D. A., Pyle, J. A., Rozanov, E., Saint-Martin, D., Sudo, K., Tanaka, T. Y.,* ***Visioni, D.****, and Yoshida, K*, Atmospheric Chemistry and Physics, 19, 10 087-10 110, doi:10.5194/acp-19-10087-2019, https://www.atmos-chem-phys.net/19/10087/2019/.

22. 2019 **The effect of atmospheric nudging on the stratospheric residual circulation in chemistry-climate models**, *Chrysanthou, A., Maycock, A. C., Chipperfield, M. P., Dhomse, S., Garny, H., Kinnison, D., Akiyoshi, H., Deushi, M., Garcia, R. R., Jockel, P., Kirner, O., Pitari, G., Plummer, D. A., Revell, L., Rozanov, E., Stenke, A., Tanaka, T. Y.,* ***Visioni, D.****, and Yamashita, Y.*, Atmospheric Chemistry and Physics, 19, 11 559-11 586, doi:10.5194/acp-19-11559-2019.

23. 2019 **The influence of mixing on the stratospheric age of air changes in the 21st century**, *Eichinger, R., Dietmuller, S., Garny, H., Sacha, P., Birner, T., Bonisch, H., Pitari, G.,* ***Visioni, D.****, Stenke, A., Rozanov, E., Revell, L., Plummer, D. A., Jockel, P., Oman, L., Deushi, M., Kinnison, D. E., Garcia, R., Morgenstern, O., Zeng, G., Stone, K. A., and Schofield, R.*, Atmospheric Chemistry and Physics, 19, 921-940, doi:10.5194/acp-19-921-2019, https://www.atmos-chem-phys.net/19/921/2019/.

24. 2018 **Stratospheric ozone loss over the Eurasian continent induced by the polar vortex shift**, *Zhang, J., Tian, W., Xie, F., Chipperfield, M. P., Feng, W., Son, S.-W., Abraham, N. L., Archibald, A. T., Bekki, S., Butchart, N., Deushi, M., Dhomse, S., Han, Y., Jockel, P., Kinnison, D., Kirner, O., Michou, M., Morgenstern, O., O'Connor, F. M., Pitari, G., Plummer, D. A., Revell, L. E., Rozanov, E.,* ***Visioni, D.****, Wang, W., and Zeng, G.*, Nature Communications, 9, 206, doi:10.1038/s41467-017-02565-2.

25. 2018 **Revisiting the Mystery of Recent Stratospheric Temperature Trends**, *Maycock, A. C., Randel, W. J., Steiner, A. K., Karpechko, A. Y., Christy, J., Saunders, R., Thompson, D. W. J., Zou, C.-Z., Chrysanthou, A., Luke, A. N., Akiyoshi, H., Archibald, A. T., Butchart, N., Chipperfield, M., Dameris, M., Deushi, M., Dhomse, S., Genova, G. D., Jockel, P., Kinnison, D. E., Kirner, O., Ladstadter, F., Michou, M., Morgenstern, O., O'Connor, F., Oman, L., Pitari, G., Plummer, D. A., Revell, L. E., Rozanov, E., Stenke, A.,* ***Visioni, D.****, Yamashita, Y., and Zeng, G.*, Geophysical Research Letters, 0, doi:10.1029/2018GL078035.

26. 2018 **Estimates of ozone return dates from Chemistry- Climate Model Initiative simulations**, *Dhomse, S. S., Kinnison, D., Chipperfield, M. P., Salawitch, R. J., Cionni, I., Hegglin, M. I., Abraham, N. L., Akiyoshi, H., Archibald, A. T., Bednarz, E. M., Bekki, S., Braesicke, P., Butchart, N., Dameris, M., Deushi, M., Frith, S., Hardiman, S. C., Hassler, B., Horowitz, L. W., Hu, R.-M., Jockel, P., Josse, B., Kirner, O., Kremser, S., Langematz, U., Lewis, J., Marchand, M., Lin, M., Mancini, E., Marecal, V., Michou, M., Morgenstern, O., O'Connor, F. M., Oman, L., Pitari, G., Plummer, D. A., Pyle, J. A., Revell, L. E., Rozanov, E., Schofield, R., Stenke, A., Stone, K., Sudo, K., Tilmes, S.,* ***Visioni, D.****, Yamashita, Y., and Zeng, G.*, Atmospheric Chemistry and Physics, 18, 8409-8438, doi:10.5194/acp-18-8409-2018, https://www. atmos-chem-phys.net/18/8409/2018/.

27. 2018 **Quantifying the effect of mixing on the mean age of air in CCMVal-2 and CCMI-1 models**, *Dietmuller, S., Eichinger, R., Garny, H., Birner, T., Boenisch, H., Pitari, G., Mancini, E.,* ***Visioni, D.****, Stenke, A., Revell, L., Rozanov, E., Plummer, D. A., Scinocca, J., Jockel, P., Oman, L., Deushi, M., Kiyotaka, S., Kinnison, D. E., Garcia, R., Morgenstern, O., Zeng, G., Stone, K. A., and Schofield, R.*, Atmospheric Chemistry and Physics, 18, 6699-6720, doi:10.5194/acp-18-6699-2018.

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28. 2018 **Ozone sensitivity to varying greenhouse gases and ozone-depleting substances in CCMI-1 simulations**, *Morgenstern, O., Stone, K. A., Schofield, R., Akiyoshi, H., Yamashita, Y., Kinnison, D. E., Garcia, R. R., Sudo, K., Plummer, D. A., Scinocca, J., Oman, L. D., Manyin, M. E., Zeng, G., Rozanov, E., Stenke, A., Revell, L. E., Pitari, G., Mancini, E., Di Genova, G.,* ***Visioni, D.****, Dhomse, S. S., and Chipperfield, M. P.*, Atmospheric Chemistry and Physics, 18, 1091-1114, doi:10.5194/acp-18-1091-2018.

29. 2018 **Large-Scale Tropospheric Transport in the Chemistry Climate Model Initiative (CCMI) Simulations**, *Orbe, C., Yang, H., Waugh, D. W., Zeng, G., Morgenstern, O., Kinnison, D. E., Lamarque, J.-F., Tilmes, S., Plummer, D. A., Scinnoca, J. F., Josse, B., Marecal, V., Jockel, P., Oman, L. D., Strahan, S. E., Deushi, M., Tanaka, T. Y., Yoshida, K., Akiyoshi, H., Yamashita, Y., Stenke, A., Revell, L., Sukhodolov, T., Rozanov, E., Pitari, G.,* ***Visioni, D.****, Stone, K. A., and Schofield, R.*, Atmospheric Chemistry and Physics, 18, https://doi.org/10.5194/acp-18-7217-2018.

30. 2018 **Tropospheric ozone in CCMI models and Gaussian process emulation to understand biases in the SOCOLv3 chemistry-climate model**, *Revell, L. E., Stenke, A., Tummon, F., Feinberg, A., Rozanov, E., Peter, T., Abraham, N. L., Akiyoshi, H., Archibald, A. T., Butchart, N., Deushi, M., Jockel, P., Kinnison, D., Michou, M., Morgenstern, O., O'Connor, F. M., Oman, L. D., Pitari, G., Plummer, D. A., Schofield, R., Stone, K., Tilmes, S.,* ***Visioni, D.****, Yamashita, Y., and Zeng, G.*, Atmospheric Chemistry and Physics, 18, 16 155-16 172, doi:10.5194/acp-18-16155-2018.

31. 2018 **Stratospheric Injection of Brominated Very Short-Lived Substances: Aircraft Observations in the Western Pacific and Representation in Global Models**, *Wales, P. A., Salawitch, R. J., Nicely, J. M., Anderson, D. C., Canty, T. P., Sunil, B., Dix, B., Koenig, T. K., Volkamer, R., Chen, D., Huey, G. L., Tanner, D. J., Cuevas, C. A., Fernandez, R. P., Kinnison, D. E., Lamarque, J. F., Lopez, A. S., Atlas, E. L., Hall, S. R., Navarro, M. A., Pan, L. L., Schauffler, S. M., Stell, M., Tilmes, S., Ullmann, K., Weinheimer, A. J., Akiyoshi, H., Chipperfield, M. P., Deushi, M., Dhomse, S. S., Feng, W., Graf, P., Hossaini, R., Jockel, P., Mancini, E., Michou, M., Morgenstern, O., Oman, L. D., Pitari, G., Plummer, D. A., Revell, L. E., Rozanov, E., Martin, D. S., Schofield, R., Stenke, A., Stone, K. A.,* ***Visioni, D.****, Youshuke, Y., and Zeng, G.*, Journal of Geophysical Research: Atmospheres, 0, doi:10.1029/2017JD027978.

32. 2017 **Deriving Global OH Abundance and Atmospheric Lifetimes for Long-Lived Gases: A Search for CH3CCl3 Alternatives**, *Liang, Q., Chipperfield, M. P., Fleming, E. L., Abraham, N. L., Braesicke, P., Burkholder, J. B., Daniel, J. S., Dhomse, S., Fraser, P. J., Hardiman, S. C., Jackman, C. H., Kinnison, D. E., Krummel, P. B., Montzka, S. A., Morgenstern, O., McCulloch, A., Muhle, J., Newman, P. A., Orkin, V. L., Pitari, G., Prinn, R. G., Rigby, M., Rozanov, E., Stenke, A., Tummon, F., Velders, G. J. M.,* ***Visioni, D.****, and Weiss, R. F.*, Journal of Geophysical Research: Atmospheres, https://doi.org/10.1017/S1473550420000361.

Exoplanetary Science

33. 2021 **Detection Of Pre-Industrial Societies On Exoplanets**, *Lockley, A. and* ***Visioni, D.****,* International Journal of Astrobiology, February 2021 , pp. 73 - 80. doi:10.1017/S1473550420000361.

Books published

2019 **A climate engineering technique for a warming planet: stratospheric sulfur injection as a temporary solution to greenhouse gasses increase.**, ***Visioni, D.***, Aracne editrice, ISBN:978-88-255-2042-2, 172 pp, available here.

International conferences and workshops

Attended as invited speaker

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June 28-July 3, 2020* **Gordon Research Conference on Climate Engineering**, *Invited talk on "Is Solar Dimming a good proxy for Sulfate geoengineering?"*, Sunday River-Newry, ME, USA, **postponed to 2022 due to COVID-19*.

August 1-7, 2021 **Ecological Society of America Annual Meeting 2021**, *Invited talk on "What goes up must come down: surface impacts of deposition in a sulfate geoengineering scenario"*, Ecological Society of America, Long Beach, California.

Jan 10-14, 2021 **American Meteorological Society Annual Meeting 2021**, *Invited talk on "Geoengineering with stratospheric aerosols - physical mechanisms and sources of uncertainty"*, American Meteorological Society, New Orleans, USA.

30 Sep 2019 **Geoengineering Modeling Research Consortium, 2nd meeting**, *Invited talk on "Comparison of SO2 and H2SO4 injection strategies using a model aerosol microphysics representation"*, Harvard University, Cambridge, MA, USA.

20-21 May 2019 **Geoengineering Modeling Research Consortium, 1st meeting**, *Invited talk on "Changes in sulfate geoengineering efficacy due to uncertainties in model representations of high clouds"*, NCAR, Boulder, CO, USA.

Attended as speaker

April 16th, 2018 **8th GeoMIP Meeting**, *Presentation on: "Upper tropospheric ice sensitivity to sulfate geoengineering"*, Zurich, Switzerland, Financed by a scholarship from Rutgers University.

June 21-22, 2016 **6th GeoMIP Meeting**, *Presentation on: "Direct and indirect radiative effects of stratospheric sulfate under geoengineering conditions"*, Oslo, Norway, Financed by NCAR scolarship.

April 25-28, 2016 **SSiRC 2016 Workshop**, *Presentation on: "Stratospheric aerosols from major volcanic eruptions: a model study of the aerosol cloud dispersal and e-folding time"*, Berlin, Germany, Financed by a WMO scholarship for young researcher.

Attended as poster presenter

March 18th-23rd, 2018 **Chapman Conference on Stratospheric Aerosol in the Post-Pinatubo Era**, *Poster presentation on: "Stratospheric aerosols from major volcanic eruptions: QBO impact on the aerosol clou dispersal and optical depth"*, Tenerife, Spain, Financed by a scholarship for Early Career Scientists founded by NASA.

Oct 9th-12th, 2017 **Climate Engineering Conference 2017**, *Poster presentation on: "Quantification of sulfur deposition under sulfate geoengineering conditions"*, Berlin, Germany.

July 23rd-28th, 2017 **I Gordon Research Conference on Climate Engineering and 7th GeoMIP meeting**, *Poster presentation on: "Upper tropospheric ice sensitivity to sulfate geoengineering"*, Sunday River-Newry, ME, USA, Financed by a GeoMIP scolarship.

Apr 24th, 2017 **EGU 2017**, *Poster presentation on: "Upper tropospheric ice sensitivity to sulfate geoengineering"*, Wien, Austria.

Oct 31st-Nov 1st, 2016 **WCRP/SPARC workshop: "Challenges for Climate Science - Synergies between SPARC and the WCRP Grand Challenges"**, *Poster presentation on: "Future trend of the lower stratospheric ozone column at tropical latitudes from SPARC-CCMI model simulations"*, Berlin, Germany.

Nov 19-20 2015 **Science Symposium on Climate**, *Poster presentation on :"Sulfate Geoengineering Impact on Methane Transport and Lifetime: Results from the Geoengineering Model Intercomparison Project (GeoMIP)"*, Rome, Italy.

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