Daniele Visioni

Curriculum Vitae

Education

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

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

2013-2015 **Master's Degree in Physics**, *University of L'Aquila*, Italy, Curriculum in Atmospheric Physics.

2009-2013 **Bachelor's Degree in Physics**, *University of L'Aquila*, Italy.

Professional appointments

2023-Present **Cornell Atkinson Faculty Fellow**, *Cornell Atkinson Center for Sustainability*, Ithaca (NY), USA.

August 2023-Present **Assistant Professor**, *Cornell University - Department of Earth and Atmospheric Sciences*, Ithaca (NY), USA.

Jan 2023-July 2023 **Project Scientist I**, *National Center for Atmospheric Research - Atmospheric Chemistry, Observation and Modeling Lab*, Boulder (CO), 40% Part-time position.

2022-2023 **Research Associate**, *Cornell University - Sibley School of Mechanical and Aerospace Engineering*, Ithaca (NY), USA.

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

2015-2018 **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.

Scholarships and Awards

March 2022 **2022 Future Leader fellow for the Aspen Institute**.

May 2021 **Selected for ACCESS-XVI**, *Atmospheric Chemistry Colloquium for Emerging Senior Scientists*.

2015-2018 **Ph.D. scholarship from the Italian Ministry of Education, University, and Research**.

Publications

First author (in bold): 14, h-index: 20; (* PhD students mentored)

56. **2023** **Quantifying the Efficiency of Stratospheric Aerosol Geoengineering at Different Altitudes**, *Lee*, W. R.,* ***Visioni, D.****, Bednarz, E. M., MacMartin, D. G., Kravitz, B., Tilmes, S.*, Geophysical Research Letters, 50, e2023GL104417, https://doi.org/10.1029/2023GL104417.

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55. **2023** **The scientific and community-building roles of the Geoengineering Model Intercomparison Project (GeoMIP) – past, present, and future**, ***Visioni, D.***, *Kravitz, B., Robock, A., Tilmes, S., Haywood, J., Boucher, O., Lawrence, M., Irvine, P., Niemeier, U., Xia, L., Chiodo, G., Lennard, C., Watanabe, S., Moore, J. C., and Muri, H.*, Atmos. Chem. Phys., 23, 5149–5176, https://doi.org/10.5194/acp-23-5149-2023, 2023.

54. 2023 **High-latitude stratospheric aerosol injection to preserve the Arctic**, *Lee*, W. R., MacMartin, D. G.,* ***Visioni, D.***, *Kravitz, B., Chen, Y., Moore, J. C., et al.*, Earth's Future, 11, e2022EF003052. https://doi.org/10.1029/2022EF003052, 2023.

53. 2023 **Interactive stratospheric aerosol models' response to different amounts and altitudes of SO_2 injection during the 1991 Pinatubo eruption**, *Quaglia*, I., Timmreck, C., Niemeier, U.,* ***Visioni, D.***, *Pitari, G., Brodowsky, C., Brühl, C., Dhomse, S. S., Franke, H., Laakso, A., Mann, G. W., Rozanov, E., and Sukhodolov, T.*, Atmos. Chem. Phys., 23, 921–948, https://doi.org/10.5194/acp-23-921-2023, 2023.

52. 2023 **Climate response to off-equatorial stratospheric sulfur injections in three Earth system models – Part 2: Stratospheric and free-tropospheric response**, *Bednarz, E. M.,* ***Visioni, D.***, *Kravitz, B., Jones, A., Haywood, J. M., Richter, J., MacMartin, D. G., and Braesicke, P.*, Atmos. Chem. Phys., 23, 687–709, https://doi.org/10.5194/acp-23-687-2023, 2023.

51. **2023** **Climate response to off-equatorial stratospheric sulfur injections in three Earth system models – Part 1: Experimental protocols and surface changes**, ***Visioni, D.***, *Bednarz, E. M., Lee, W. R., Kravitz, B., Jones, A., Haywood, J. M., and MacMartin, D. G.*, Atmos. Chem. Phys., 23, 663–685, https://doi.org/10.5194/acp-23-663-2023, 2023.

50. 2022 **Assessing Responses and Impacts of Solar climate intervention on the Earth system with stratospheric aerosol injection (ARISE-SAI): protocol and initial results from the first simulations**, *Richter, J. H.,* ***Visioni, D.***, *MacMartin, D. G., Bailey, D. A., Rosenbloom, N., Dobbins, B., Lee, W. R., Tye, M., and Lamarque, J.-F.*, Geosci. Model Dev., 15, 8221–8243, https://doi.org/10.5194/gmd-15-8221-2022, 2022.

49. 2022 **A Review of El Niño Southern Oscillation Linkage to Strong Volcanic Eruptions and Post-Volcanic Winter Warming**, *Mubashar Dogar, M., Hermanson L., Scaife A.,* ***Visioni, D.***, *Zhao, M., Hoteit, I., Graf, H., Dogar, A.M., Almazroui M., Fujiwara, M.*, Earth Syst Environ, https://doi.org/10.1007/s41748-022-00331-z.

48. 2022 **Impact of the latitude of stratospheric aerosol injection on the Southern Annular Mode**, *Bednarz, E.,* ***Visioni, D.***, *Richter, J. H., Butler, A. H., MacMartin, D.G.*, Geophysical Research Letters, 49, e2022GL100353, https://doi.org/10.1029/2022GL100353.

47. 2022 **A Subpolar-focused Stratospheric Aerosol Injection Deployment Scenario**, *Smith, W., Bhattarai, U., MacMartin, D.G., Lee, W.R.,* ***Visioni, D.***, *Kravitz, B., Rice, C.V.*, Environmental Research Letters, 4 095009, https://doi.org/10.1088/2515-7620/ac8cd3.

46. 2022 **Indices of Extremes: Geographic patterns of change in extremes and associated vegetation impacts under climate intervention**, *Tye, M. R., Dagon, K., Molina, M. J., Richter, J. H.,* ***Visioni, D.***, *Kravitz, B., and Tilmes, S.*, Earth Syst. Dynam., 13, 1233–1257, https://doi.org/10.5194/esd-13-1233-2022.

45. 2022 **Scenarios for modeling solar radiation modification**, *MacMartin, D.,* ***Visioni, D.***, *Kravitz, B., Richter J.H., Felghenauer T., Lee W.R., Morrow D.R., Parson E.A., Sugiyama M.*, Proceedings of the National Academy of Science, 119 (33) e2202230119, https://doi.org/10.1073/pnas.2202230119.

44. 2022 **The overlooked role of the stratosphere under a solar constant reduction**, *Bednarz, E.,* ***Visioni, D.***, *Banerjee, A., Braesicke, P., Kravitz, B., MacnMartin, D.G.*, Geophysical Research Letters, 49, e2022GL098773, https://doi.org/10.1029/2022GL098773.

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43. 2022 **An approach to sulfate geoengineering with surface emissions of carbonyl sulfide**, *Quaglia*, I.,* ***Visioni, D.****, Pitari, G., and Kravitz, B.*, Atmos. Chem. Phys., 22, 5757–5773, https://doi.org/10.5194/acp-22-5757-2022, 2022.

42. 2022 **Changes in Hadley circulation and intertropical convergence zone under strategic stratospheric aerosol geoengineering**, *Cheng, W., MacMartin, D.G., Kravitz, B.* ***Visioni, D.****, Bednarz, E.M., Xu, Y., Luo, Y., Huang, L., Staten, P.W., Hitchcock, P., Moore, J.C., Guo, A., Deng, X.*, npj Clim. Atmos. Sci. 5, 32, https://doi.org/10.1038/s41612-022-00254-6, 2022.

41. 2022 **Stratospheric ozone response to sulfate aerosol and solar dimming climate interventions based on the G6 Geoengineering Model Intercomparison Project (GeoMIP) simulations**, *Tilmes, S.,* ***Visioni, D.****, Jones, A., Haywood, J., Séférian, R., Nabat, P., Boucher, O., Bednarz, E. M., and Niemeier, U.*, Atmos. Chem. Phys., 22, 4557–4579, https://doi.org/10.5194/acp-22-4557-2022, 2022.

40. 2022 **The impact of stratospheric aerosol intervention on the North Atlantic and Quasi-Biennial Oscillations in the Geoengineering Model Intercomparison Project (GeoMIP) G6sulfur experiment**, *Jones, A., Haywood, J. M., Scaife, A. A., Boucher, O., Henry, M., Kravitz, B., Lurton, T., Nabat, P., Niemeier, U., Séférian, R., Tilmes, S., and* ***Visioni, D.****,* Atmos. Chem. Phys., 22, 2999–3016, https://doi.org/10.5194/acp-22-2999-2022, 2022.

39. 2022 **An interactive stratospheric aerosol model intercomparison of solar geoengineering by stratospheric injection of SO_2 or accumulation-mode sulfuric acid aerosols**, *Weisenstein, D. K.,* ***Visioni, D.****, Franke, H., Niemeier, U., Vattioni, S., Chiodo, G., Peter, T., and Keith, D. W.*, Atmos. Chem. Phys., 22, 2955–2973, https://doi.org/10.5194/acp-22-2955-2022, 2022.

38. **2022** **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., 22, 1739–1756, https://doi.org/10.5194/acp-22-1739-2022, 2022.

37. 2022 **How large is the design space for stratospheric aerosol geoengineering?**, *Zhang, Y., MacMartin, D. G.,* ***Visioni, D.****, and Kravitz, B.*, Earth Syst. Dynam., 13, 201–217, https://doi.org/10.5194/esd-13-201-2022.

36. 2022 **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., 22, 93–118, https://doi.org/10.5194/acp-22-93-2022.

35. **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.

34. **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.

33. 2021 **Sensitivity of total column ozone to stratospheric sulfur injection strategies**, *Tilmes, S., Richter, Y., Kravitz, B., MacMartin, D. G., Glanville, A.,* ***Visioni, D.****, Kinnison, D. and Mueller, R.*, Geophysical Research Letters, 48, e2021GL094058. https://doi.org/10.1029/2021GL094058.

32. 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.

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31. 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, 48, e2021GL092696, https://doi.org/10.1029/2021GL092696.

30. 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; https://doi.org/10.1073/pnas.1921854118.

29. 2021 **From fAIrplay to Climate Wars: Making climate change scenarios more dynamic, creative and integrative**, *Pereira, L., Morrow, D., Aquila, V., Beckage, B., Beckbesinger, S., Beukes, L., Buck, L., Carlson, C., Geden, O., Jones, A., Keller, D., Mach, K., Mashigo, M., Moreno-Cruz, J.,* ***D. Visioni****, Nicholson, S., Trisos, C.*, Ecology and Society 26(4):30. https://doi.org/10.5751/ES-12856-260430.

28. 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.

27. 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.

26. 2021 **Detection Of Pre-Industrial Societies On Exoplanets**, *Lockley, A. and* ***Visioni, D.***, International Journal of Astrobiology, February 2021 , pp. 73 - 80. https://doi.org/10.1017/S1473550420000361.

25. **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, https://doi.org/10.1029/2020GL089470.

24. **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, https://doi.org/10.1029/2020GL088337.

23. **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.

22. 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.

21. **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.

20. 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.

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19. 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, https://doi.org/10.5194/acp-19-10087-2019.

18. 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, https://doi.org/10.5194/acp-19-11559-2019.

17. 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, https://doi.org/10.5194/acp-19-921-2019.

16. **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.

15. **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, https://doi.org/10.5194/acp-18-2787-2018.

14. 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, https://doi.org/10.1038/s41467-017-02565-2.

13. 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, https://doi.org/10.1029/2018GL078035.

12. 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, https://doi.org/10.5194/acp-18-8409-2018.

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11. 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.

10. 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, https://doi.org/10.5194/acp-18-1091-2018.

9. 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.

8. 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, https://doi.org/10.5194/acp-18-16155-2018.

7. 2018 **Stratospheric injection of brominated very short-lived dubstances: 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, 123, 5690– 5719. https://doi.org/10.1029/2017JD027978.

6. **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, https://doi.org/10.5194/acp-17-11209-2017.

5. **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, https://doi.org/10.5194/acp-17-3879-2017.

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4. 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: Atmospheres122, 11,914– 11,933. https://doi.org/10.1002/2017JD026926.

3. 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, https://doi:10.3390/atmos7070085.

2. 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, https://doi:10.3390/atmos7060075, 20.

1. 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.

Non peer-reviewed publications

5. 2022 **Solar radiation modification is risky, but so is rejecting it: a call for balanced research**, *Wieners, C. E., Hofbauer, B. P., de Vries, I. E., Honegger, M.,* ***Visioni, D.****, Russchenberg, H. W. J., Felgenhauer T.*, Oxford Open Climate Change, Volume 3, Issue 1, 2023.

4. 2022 **Process-Level Experiments and Policy-Relevant Scenarios in Future GeoMIP Iterations**, ***Visioni, D.****, Robock, A., Duffey, A. and Quaglia, I.*, Bulletin of the American Meteorological Society, 104, E501-E503.

3. 2022 **Future geoengineering scenarios: balancing policy relevance and scientific significance**, ***Visioni, D.****, and Robock, A.*, Bulletin of the American Meteorological Society, 103(3), E817-E820.

2. 2021 **Solar Radiation Management Primer, available at** `https://www.srmprimer.org/`, *Lee, W., MacMartin, D. G, Visioni., D.*, A primer intended for a general audience about the topic of Solar Radiation Management.

1. 2021 **Climate engineering research is essential to a just transition and sustainable future**, *Kravitz, B., Visioni., D., Snider, L., MacMartin, D. G.*, Editorial published on theHill.com `https://thehill.com/opinion/energy-environment/559859-climate-engineering-research-is-essential-to-a-just-transition-and`.

Teaching and mentoring activities

2021-Current **External examiner for PhD and Master thesis**.
Cambridge University (PhD); ETH Zurich (Master)

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

Aug 2019-2022 **GSMU Mentorship Program**, Cornell University.
Mentoring first generation college students with an interest in pursuing a PhD

2018 **Lecturer**, *Atmospheric radiative transfer*, Department of Physical and Chemical Sciences, University of L'Aquila.

2017,2018 **Lecturer**, *Magnetism and Electricity Lab*, Department of Physical and Chemical Sciences, University of L'Aquila.

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2017,2018 **Lecturer**, *General physics*, Department of Biology and Life Sciences, University of L'Aquila.

Research Grants

As PI or co-PI

2022 **National Oceanic and Atmospheric Administration - Earth Radiation Budget Program**, *Atmospheric Aerosols and their Potential Roles in Solar Climate Intervention Methods grant - Assessing the impact of Stratospheric Aerosol Interventions on Regional Climate and Air Quality*, Awarded (NA22OAR4310477), PI: S. Tilmes, listed as co-PI.

2022 **Resources for the Future - Social Science Research into Solar Geoengineering**, *Integrating Risk Perception with Climate Models to Understand the Potential Deployment of Solar Radiation Modification to Mitigate Climate Change*, Awarded, 10.000 $, PIs: B. Beckage, D. Visioni.

As External Collaborator or Senior Personnel

2022 **European Research Council Starting Grant**, *Stratospheric cOmposition in a changing CLIMate: drivers and mechanisms (SOCLIM)*, Awarded, PI: G. Chiodo, listed as External Collaborator.

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

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.

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

Scientific Leadership

October 2022-Ongoing **National Center for Atmospheric Research (NCAR)**, *External co-chair for the Whole Atmosphere Working Group (WAWG)*, Assisting and overseeing model development for the Whole Atmosphere Climate Chemistry Model (WACCM) together with the internal NCAR co-chairs.

October 2022-March 2023 **American Geophysical Union (AGU)**, *Expert on panel tasked with updating the Union statement on Climate Intervention*, `https://www.agu.org/Share-and-Advocate/Share/Policymakers/Position-Statements/Draft-Climate-Intervention`.

June 27-28, 2022 **Gordon Research Seminar on Climate Engineering**, *Co-chair*, Sunday River-Newry, ME, USA, Conference organization, speakers selection, funding.

Feb 2022-December 2022 **World Climate Research Programme (WCRP) Climate Intervention Task Team**, *Charged with establishing a strategy as to how WCRP can address Climate Intervention research in the future*.

March 2021-July 2022 **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. Invited to attend the Panel Review Meeting in Geneva to draft the Executive Summary.

2019,2021,2022 **AGU Fall Meeting**, *Session Chair or Session Convener on Climate Engineering related sessions*, Multiple locations.

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.

Professional Activities

Oct 30-Nov 1 2022 **Climate Intervention Scenario Design Workshop**, *Organizing Committee*, Boulder, CO.
Workshop planning, assisted in writing funding requests (successful), invites, organization.

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

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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.

International conferences, talks and workshops

Attended as invited speaker

November 15, 2022 **Climate and Global Dynamics seminar series, NCAR**, *"Stratospheric aerosol geoengineering: How do we move towards a more robust assessment"*, Boulder, CO, USA, YouTube recording.

September 23, 2022 **Lamont-Doherty Earth Observatory Earth Science Colloquium**, *"Understanding the potential impacts of sulfate aerosol injections on the climate system"*, Columbia University, New York, NY, USA, event link.

June 28-July 3, 2022 **Gordon Research Conference on Climate Engineering**, *"The Role of Different Temperature Targets for Determining Climate Engineering Outcomes and Trade-Offs"*, Sunday River-Newry, ME, USA.

April 11th 2022 **Atmospheric Chemistry Observation and Modeling Virtual Seminar**, *"Stratospheric aerosol geoengineering: understanding and reducing modeling uncertainties"*, YouTube recording.

March 22th 2022 **Labont seminars: Climate Crisis and Future Generations, Sant'Anna School of Advanced Studies, Italy**, *"Climate engineering: what do we know, what do we still need to know, and should we know it?"*, YouTube recording.

January 13th 2022 **University of Perugia, Italy, Department of Physics and Geology**, *"The Sun-Earth relationship across different timescales and its climatic influences"*.

January 10th 2022 **University of Washington, Department of Atmospheric Sciences**, *"Understanding the potential impacts of sulfate aerosol injections on the climate system"*.

October 13th 2021 **Yale College**, *"Earth System Modeling applied to Geoengineering"*.
As part of the course Geo Engineering:Climate Change held by prof. W. Smith

August 12, 2021 **Center for Climate Repair at Cambridge Summer Workshop Series**, *"Refreezing the Arctic: Stratospheric Aerosol Injection and other techniques"*, Center for Climate Repair at Cambridge, Cambridge, UK, YouTube recording.

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

Jan 10-14, 2021 **American Meteorological Society Annual Meeting 2021**, *"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**, *"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**, *"Changes in sulfate geoengineering efficacy due to uncertainties in model representations of high clouds"*, NCAR, Boulder, CO, USA.

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