

CURRICULUM VITAE

Updated: May 27th, 2021

Jasper F. Kok, Ph.D.

Associate Professor

Department of Atmospheric and Oceanic Sciences
University of California, Los Angeles

EDUCATION

- 2009** **Ph. D.**, Applied Physics, *University of Michigan*, USA (received Distinguished Dissertation Award)
- 2003** **Professional Science Master's (PSM)**, Applied Physics, *University of Arizona*, USA
- 2001** **B.S.**, Physics, *Leiden University*, The Netherlands

PROFESSIONAL EXPERIENCE (Post – Ph. D.)

- 2017 -** Associate professor, Department of Atmospheric and Oceanic Sciences, University of California – Los Angeles
- 2013 -** Assistant professor, Department of Atmospheric and Oceanic Sciences, University of California – Los Angeles
- 2011 -** National Science Foundation Postdoctoral Research Fellow with Natalie Mahowald at **2013** Cornell University, Ithaca, NY
- 2009 -** Postdoctoral Fellow, Advanced Study Program (ASP), National Center for **2011** Atmospheric Research (NCAR), Boulder, CO

HONORS AND AWARDS


- 2019** Received the American Meteorological Society's **Henry Houghton Early Career award** for "novel approaches to studying the physics of dust emissions into the atmosphere and the interactions of dust aerosols with Earth's climate and beyond"
- 2016** Received an **NSF CAREER award**
- 2015** Awarded a **UCLA Faculty Career Development Award**
- 2011** Awarded a **National Science Foundation Postdoctoral Research Fellowship** in Atmospheric and Geospace Sciences
- 2010** **Nominated** for the 2010 Council of Graduate Schools **National Distinguished Dissertation Award**
- 2009** Awarded an **Advanced Study Program Postdoctoral Fellowship** from the National Center for Atmospheric Research (NCAR)
- 2009** Received the 2009 **Distinguished Dissertation Award** from the University of Michigan (1 of 8 university-wide out of 792 dissertations)
- 2008** Received **Predocctoral Fellowship** from the Horace H. Rackham graduate school
- 2007** Received **Outstanding Student Paper Award** at American Geophysical Union Fall Meeting
- 2006** Received the **Thomas M. Donahue Memorial Student Award**

PUBLICATIONS (*postdocs, graduate or undergraduate students*)




Denotes paper that received enough citations to be in top 1% of its academic field (Thomson Reuters / Web of Science designation)

80. Comola, F., **J. F. Kok**, J. M. Lora, *K. Cohan*, X. Yu, C. He, P. McGuiggan, S. M. Horst, and F. Turney, Intermittent saltation drives Mars-like aeolian activity on Titan, <https://eartharxiv.org/repository/view/2200/>, in review.
79. Klose, M., O. Jorba, M. Gonçalves Ageitos, J. Escribano, M. L. Dawson, V. Obiso, E. Di Tomaso, S. Basart, G. M. Pinto, F. Macchia, P. Ginoux, J. Guerschman, C. Prigent, Y. Huang, **J. F. Kok**, R. L. Miller, and C. Pérez García-Pando, Mineral dust cycle in the Multiscale Online Nonhydrostatic Atmosphere Chemistry model (MONARCH) Version 2.0, *Geoscientific Model Development Discussions* [preprint], <https://doi.org/10.5194/gmd-2021-32>, in review.
78. Ito, A., *A. A. Adebisi*, Y. Huang, and **J. F. Kok**: Less atmospheric radiative heating due to aspherical dust with coarser size, *Atmospheric Chemistry and Physics*, in review.
77. Heisel, M., B. Chen, **J. F. Kok**, and M. Chamecki, Gentle topography increases vertical transport of coarse dust by orders of magnitude, *Journal of Geophysical Research – Atmospheres*, in review.
76. **Kok, J. F.**, *A. A. Adebisi*, S. Albani, Y. Balkanski, R. Checa-Garcia, M. Chin, P. R. Colarco, D. S. Hamilton, Y. Huang, A. Ito, M. Klose, L. Li, N. M. Mahowald, R. L. Miller, V. Obiso, C. Pérez García-Pando, A. Rocha-Lima, and J. S. Wan (2021), Contribution of the world's main dust source regions to the global cycle of desert dust, *Atmospheric Chemistry and Physics*, 21, 8169-93.
75. **Kok, J. F.**, *A. A. Adebisi*, S. Albani, Y. Balkanski, R. Checa-Garcia, M. Chin, P. R. Colarco, D. S. Hamilton, Y. Huang, A. Ito, M. Klose, D. M. Leung, L. Li, N. M. Mahowald, R. L. Miller, V. Obiso, C. Pérez García-Pando, A. Rocha-Lima, J. S. Wan, and C. A. Whicker (2021), Improved representation of the global dust cycle using observational constraints on dust properties and abundance, *Atmospheric Chemistry and Physics*, 21, 8127-67.
74. Tai, A. P. K., P. H. L. Ma, Y.-C. Chan, M.-K. Chow, D. A. Ridley, and **J. F. Kok** (2021), Impacts of climate and land cover variability and trends on springtime East Asian dust emission over 1982-2010: A modeling study, 254, 118348, *Atmospheric Environment*, <https://doi.org/10.1016/j.atmosenv.2021.118348>.
73. Huang, Y., *A. A. Adebisi*, P. Formenti, and **J. F. Kok** (2021), Linking the different diameter types of aspherical desert dust indicates that models underestimate coarse dust emission, *Geophysical Research Letters*, 48, e2020GL092054.
72. Li, L., N. M. Mahowald, R. L. Miller, C. Pérez García-Pando, M. Klose, D. S. Hamilton, M. G. Ageitos, P. Ginoux, Y. Balkanski, R. O. Green, O. Kalashnikova, **J. F. Kok**, V. Obiso, D. Paynter, and D. R. Thompson (2021), Quantifying the range of the dust direct radiative effect due to source mineralogy uncertainty, *Atmospheric Chemistry and Physics*, 21, 3973–4005.
71. Hamilton, D. S., R. A. Scanza, S. D. Rathod, L. Li, T. C. Bond, **J. F. Kok**, H. Matsui, S. Tilmes, and N. M. Mahowald (2020), Recent (1980-to-2015) trends and variability in daily-to-interannual soluble iron deposition from dust, fire, and anthropogenic sources, *Geophysical Research Letters*, 47, e2020GL089688.
70. Sullivan, R., **J. F. Kok**, H. Yizhaq, and I. Kutra (2020), A broad continuum of aeolian impact ripple morphologies on Mars is enabled by low wind dynamic pressures, *Journal of Geophysical Research – Planets*, 125, e2020JE006485, doi: 10.1029/2020JE006485.
69. Swet, N., **J. F. Kok**, Y. Huang, H. Yizhaq, and I. Kutra (2020), Low dust generation potential from active sand grains by wind abrasion, *Journal of Geophysical Research – Earth Surface*, 125, e2020JF005545.

68. Burr, D. M., S. L. F. Sutton, J. P. Emery, E. V. Nield, **J. F. Kok**, J. K. Smith, and N. T. Bridges (2020), A wind tunnel study of the effect of intermediate density ratio on saltation threshold, *Aeolian Research*, 45, 100601.
67. *Adebiyi, A. A.*, and **J. F. Kok** (2020), Climate models miss most of the coarse dust in the atmosphere, *Science Advances*, 6, eaaz9507. (This paper received the 2020 Richard P. and Linda S. Turco Exceptional Publication Award.)
66. *Huang, Y.*, **J. F. Kok**, K. Kandler, H. Lindqvist, T. Nousiainen, T. Sakai, *A. A. Adebiyi*, and O. Jokinen (2020), Climate models and remote sensing retrievals underestimate desert dust asphericity, *Geophysical Research Letters*, 47, e2019GL086592.
65. *Adebiyi, A. A.*, **J. F. Kok**, *Y. Wang*, A. Ito, D. A. Ridley, P. Nabat, and C. Zhao (2020), Dust Constraints from joint Observational-Modeling Experimental Analysis – DustCOMM, *Atmospheric Chemistry and Physics*, 20, 829-863.
64. *Comola, F.*, **J. F. Kok**, M. Chamecki, and *R. L. Martin* (2019), The intermittency of wind-driven sand transport, *Geophysical Research Letters*, 46, 13,430-13,440, <https://doi.org/10.1029/2019GL085739>.
63. Sherman, D. J., P. Zhang, *R. L. Martin*, J. T. Ellis, **J. F. Kok**, E. J. Farrell, and B. Li (2019), Aeolian ripple migration and associated creep transport rates, *Geosciences*, 9, 389.
62. Hamilton, D., R. Scanza, Y. Feng, J. Guinness, **J. F. Kok**, L. Li, X. Liu, S. Rathod, J. Wan, M. Wu, and N. M. Mahowald (2019), Improved methodologies for Earth system modelling of atmospheric soluble iron and observation comparisons using the Mechanism of Intermediate complexity for Modelling Iron (MIMI), *Geoscientific Model Development*, 12, 3835–3862, 2019.
61. *Martin, R. L.*, and **J. F. Kok** (2019), Size-independent susceptibility to transport in aeolian saltation, *Journal of Geophysical Research – Earth Surface*, 124, 1658-74.
60. *Comola, F.*, J. Gaume, **J. F. Kok**, and M. Lehning (2019), Cohesion-induced enhancement of aeolian saltation, *Geophysical Research Letters*, 46, 5566–5574.
59. Ito A., ..., **J. F. Kok**, ... (2019), Pyrogenic iron: The missing link to high iron solubility in aerosols, *Science Advances*, 5, eaau7671. 
58. *Huang Y.*, **J. F. Kok**, *R. L. Martin*, N. Swet, I. Katra, T. E. Gill, R. L. Reynolds, and L. S. Freire (2019), Fine dust emissions from active sands at coastal Oceano Dunes, California, *Atmospheric Chemistry and Physics*, 19, 2947-64.
57. Siminovich, A., T. Elperin, I. Katra, **J. F. Kok**, R. Sullivan, S. Silvestro, and H. Yizhaq (2019), Numerical study of shear stress distribution over sand ripples under terrestrial and Martian conditions, *Journal of Geophysical Research*, 124, 175-185.
56. Yizhaq, H., G. Bel, S. Silvestro, T. Elperin, **J. F. Kok**, M. Cardinale, A. Provenzale, and I. Katra (2019), The origin of the transverse instability of aeolian megaripples, *Earth and Planetary Science Letters*, 512, 59-79.
55. Swet, N. T. Elperin, **J. F. Kok**, *R. L. Martin*, H. Yizhaq, I. Katra (2019), Can active sands generate dust particles by wind-induced processes?, *Earth and Planetary Science Letters*, 506, 371-380.
54. Myriokefalitakis, S., ..., **J. F. Kok**, ... (2018), Reviews and syntheses: The GESAMP atmospheric iron deposition model intercomparison study, *Biogeosciences*, 15, 6659-6684.
53. Rodriguez, S., S. Le Mouélic, J. W. Barnes, **J. F. Kok**, S. C. R. Rafkin, R. D. Lorenz, B. Charnay, J. Radebaugh, and 22 co-authors (2018), Observational evidence for active dust storms on Titan at Equinox, *Nature Geoscience*, 11, 727-32.

52. *Martin, R. L., and J. F. Kok* (2018), Distinct thresholds for the initiation and cessation of aeolian saltation from field measurements, *Journal of Geophysical Research – Earth Surface*, 123, 1546-65.
51. Gillies, J. A., V. Etyemezian, G. Nikolich, W.G. Nickling, and **J. F. Kok** (2018), Changes in the saltation flux following a step change in macro-roughness, *Earth and Planetary Science Letters*, 43, 1871-84.
50. **Kok, J. F.**, D. S. Ward, N. M. Mahowald, and A. T. Evan (2018), Global and regional importance of the direct dust-climate feedback, *Nature Communications*, 9, 241.
49. *Martin, R. L., J. F. Kok, C. H. Hugenholtz, T. E. Barchyn, M. Chamecki, and J. T. Ellis* (2018), High-frequency measurements of aeolian saltation flux: Field-based methodology and applications, *Aeolian Research*, 30, 97-114.
48. Sullivan, R., and **J. F. Kok** (2017), Aeolian saltation on Mars at low wind speeds, *Journal of Geophysical Research – Planets*, 122, 2111-2143.
47. *Martin, R. L., and J. F. Kok* (2017), Wind-invariant saltation heights imply linear scaling of aeolian saltation flux with shear stress, *Science Advances*, 3, e1602569.
46. *Comola, F., J. F. Kok, J. Gaume, E. Paterna, and M. Lehning* (2017), Fragmentation of wind-blown snow crystals, *Geophysical Research Letters*, 44, 4195-4203.
45. Ito, A. and **J. F. Kok** (2017), Do dust emissions from sparsely vegetated regions dominate atmospheric iron supply to the Southern Ocean? *Journal of Geophysical Research – Atmospheres*, 122, 3987-4002.
44. **Kok, J. F.**, D. A. Ridley, Q. Zhou, R. L. Miller, C. Zhao, C. L. Heald, D. S. Ward, S. Albani, and K. Haustein (2017), Smaller desert dust cooling effect estimated from analysis of dust size and abundance, *Nature Geoscience*, 10, 274-8.  Highly Cited Paper
43. Ridley, D. A., C. L. Heald, **J. F. Kok**, and C. Zhao (2016), An Observationally-Constrained estimate of Global Dust AOD, *Atmospheric Chemistry and Physics*, 16, 15,097-117.
42. Neakrase, L. D. V., M. R. Balme, F. Esposito, T. Kelling, M. Klose, **J. F. Kok**, B. Marticorena, J. Merrison, M. Patel, and G. Wurm (2016), Particle lifting processes in dust devils, *Space Science Reviews*, 203, 347-76.
41. Schmerler, E., I. Katra, **J. F. Kok**, H. Tsoar, and H. Yizhaq (2016), Experimental and numerical study of Sharp's shadow zone hypothesis on sand ripple wavelength, *Aeolian Research*, 22, 37-46.
40. Újvári, G., **J. F. Kok**, G. Varga, and J. Kovács (2016), The physics of wind-blown loess: Implications for grain size proxy interpretations in Quaternary paleoclimate studies, *Earth Science Reviews*, 154, 247-78.
39. Zhang, Y. N. Mahowald, R. A. Scanza, E. Journet, K. Desboeufs, S. Albani, **J. F. Kok**, G. Zhuang, Y. Chen, D. D. Cohen, A. Paytan, M. D. Patey, E. P. Achterberg, J. P. Engelbrecht, and K. W. Fomba (2015), Modeling the Global Emission, Transport and Deposition of Trace Elements associated with Mineral Dust, *Biogeosciences*, 12, 5771-92.
38. Shao, Y., W. Nickling, G. Bergametti, H. Butler, A. Chappell, P. Findlater, J. Gillies, M. Ishizuka, M. Klose, **J. F. Kok**, J. Leys, H. Lu, B. Marticorena, G. McTainsh, C. McKenna-Neuman, G. Okin, C. Strong, and N. Webb (2015), A Tribute to Michael R. Raupach for Contributions to Aeolian Fluid Dynamics, *Aeolian Research*, 19, 37-54.
37. Pähtz, T., O. Duran, T.-D. Ho, A. Valance, and **J. F. Kok** (2015), The fluctuation energy balance in non-suspended fluid-mediated particle transport, *Physics of Fluids*, 27, 013303.
36. Scanza, R. A., N. Mahowald, S. Ghan, C. S. Zender, **J. F. Kok**, X. Liu, Y. Zhang, and S. Albani (2015), Modeling dust as component minerals in the Community Atmosphere Model:

- development of framework and impact on radiative forcing, *Atmospheric Chemistry and Physics*, 15, 537-61.
35. **Kok, J. F.**, S. Albani, N. M. Mahowald, and D. S. Ward (2014), An improved dust emission model – Part 2: Evaluation in the Community Earth System Model, with implications for the use of dust source functions, *Atmospheric Chemistry and Physics*, 14, 13,043-61.
 34. **Kok, J. F.**, N. M. Mahowald, G. Fratini, J. A. Gillies, M. Ishizuka, J. Leys, M. Mikami, M.-S. Park, S.-U. Park, R. S. Van Pelt, and T. M. Zobeck (2014), An improved dust emission model – Part 1: Model description and comparison against measurements, *Atmospheric Chemistry and Physics*, 14, 13,023-41.
 33. Barchyn, T. E., R. L. Martin, **J. F. Kok**, and C. H. Hugenholtz (2014), Fundamental mismatches between measurements and models in aeolian sediment transport prediction: The role of small-scale variability, *Aeolian Research*, 15, 245-51, DOI: 10.1016/j.aeolia.2014.07.002.
 32. Albani, S., N. M. Mahowald, A. T. Perry, R. A. Scanza, C. S. Zender, N. G. Heavens, V. Maggi, **J. F. Kok**, and B. L. Otto-Bliesner (2014), Improved dust representation in the Community Atmosphere Model, *Journal of Advances in Modeling Earth Systems*, 6, 541-70, DOI: 10.1002/2013MS000279.
 31. Mahowald, N. M., S. Albani, **J. F. Kok**, S. Engelstaedter, R. Scanza, D. S. Ward, and M. Flanner (2014), The size distribution of desert dust aerosols and its impact on the Earth system, *Aeolian Research*, 15, 53-71, DOI: 10.1016/j.aeolia.2013.09.002.  Highly Cited Paper
 30. Pähtz, T, E. J. R. Parteli, **J. F. Kok**, and H. J. Herrmann (2014), Analytical model for flux saturation in sediment transport, *Physical Review E*, 89, 052213.
 29. Katra, I., H. Yizhaq, and **J. F. Kok** (2014), Mechanisms limiting the growth of aeolian megaripples, *Geophysical Research Letters*, 41, 858-65.
 28. Yizhaq, H., **J. F. Kok**, and I. Katra (2014), Basaltic sand ripples at Eagle crater as indirect evidence for the hysteresis effect in martian saltation, *Icarus*, 230, 143-50.
 27. Renno, N. O., D. Halleaux, H. Elliott, and **J. F. Kok** (2013), The lifting of aerosols and their effects on atmospheric dynamics, in *Comparative Climatology of Terrestrial Planets*, 355 – 67, Eds. S. J. Mackwell et al., University of Arizona Press, Tucson.
 26. Pähtz, T, **J. F. Kok**, E. J. R. Parteli, and H. J. Herrmann (2013), Flux saturation length of sediment transport, *Physical Review Letters*, 111, 218002.
 25. Zhao, C., S. Chen, L. R. Leung, Y. Qian, **J. F. Kok**, R. Zaveri, and J. Huang (2013), Uncertainty in modeling dust mass balance and radiative forcing from size parameterization, *Atmospheric Chemistry and Physics*, 13, 10733-53.
 24. Zhang, L., **J. F. Kok**, D. K. Henze, Q. Li, and C. Zhao (2013), Improving Simulations of Fine Dust Surface Concentrations over the Western United States by Optimizing the Particle Size Distribution, *Geophysical Research Letters*, 40, 3270-5.
 23. Nabat, P., F. Solmon, M. Mallet, **J. F. Kok**, and S. Somot (2012), Dust emission size distribution impact on aerosol budget and radiative forcing over the Mediterranean region: a regional climate model approach, *Atmospheric Chemistry and Physics*, 12, 10545-67.
 22. **Kok, J. F.**, E. J. R. Parteli, T. I. Michaels, and D. Bou Karam (2012), The physics of wind-blown sand and dust, *Reports on Progress in Physics*, 75, 106901 (72 pp).  Highly Cited Paper
 21. Pähtz, T, **J. F. Kok**, and H. J. Herrmann (2012), The apparent roughness of a sand surface blown by wind from an analytical model of saltation, *New Journal of Physics*, 14, 043035.
 20. Yizhaq, H., I. Katra, **J. F. Kok**, and O. Isenberg (2012), Transverse instability of megaripples, *Geology*, 40, 459-62.

19. **Kok, J.** (2012), Planetary science: Martian sand blowing in the wind, *Nature*, 485, 312-3.
18. Ito, A., **J. F. Kok**, Y. Feng, and J. E. Penner (2012), Does a theoretical estimation of the dust size distribution at emission suggest more bioavailable iron deposition?, *Geophysical Research Letters*, 39, L05807.
17. **Kok, J. F.** (2011), Does the size distribution of mineral dust aerosols depend on the wind speed at emission?, *Atmospheric Chemistry and Physics*, 11, 10149-56.
16. **Kok, J. F.** (2011), A scaling theory for the size distribution of emitted dust aerosols suggests climate models underestimate the size of the global dust cycle, *Proceedings of the National Academy of Sciences (PNAS)*, 108(3), 1016-21. 
15. Isenberg, O., H. Yizhaq, H. Tsoar, R. Wenkart, A. Karnieli, **J. F. Kok**, and I. Katra (2011), Megaripple flattening due to strong winds, *Geomorphology*, 131, 69-84.
14. Mehta, M., N. O. Renno, J. Marshall, M. R. Grover, A. Sengupta, N. A. Rusche, **J. F. Kok**, R. E. Arvidson, W. J. Markiewicz, M. Lemmon, and P. H. Smith (2011), Explosive erosion during the Phoenix landing exposes subsurface water on Mars, *Icarus*, 211, 172-194.
13. **Kok, J. F.** (2010), An improved parameterization of wind-blown sand flux on Mars that includes the effect of hysteresis, *Geophysical Research Letters*, 37, L12202.
12. **Kok, J. F.** (2010), Difference in wind speeds required for initiation versus continuation of sand transport on Mars: Implications for dunes and dust storms, *Physical Review Letters*, 104, 074502. (Featured on the 2/13/2010 edition of "All Things Considered" on **National Public Radio**)
11. Renno, N. O., ..., **J. F. Kok**, ... (2009), Possible physical and thermodynamical evidence for liquid water at the Phoenix landing site, *Journal of Geophysical Research – Planets*, 114, E00E03.
10. **Kok, J. F.**, and N. O. Renno (2009), A comprehensive numerical model of steady-state saltation (COMSALT), *Journal of Geophysical Research – Atmospheres*, 114, D17204.
9. Ruf, C., N. O. Renno, **J. F. Kok**, E. Bandelier, M. J. Sanders, S. Gross, L. Skjerve, B. Cantor (2009), The emission of non-thermal radiation by a Martian dust storm, *Geophysical Research Letters*, 36, L13202. (This paper was selected as an **American Geophysical Union Journal Highlight**)
8. **Kok, J. F.**, and D. J. Lacks (2009), Electrification of granular systems of identical insulators, *Physical Review E*, 79, 051304.
7. **Kok, J. F.**, and N. O. Renno (2009), Electrification of wind-blown sand on Mars and its implications for atmospheric chemistry, *Geophysical Research Letters*, 36, L05202.
6. Rasmussen, K. R., **J. F. Kok**, and J. P. Merrison (2009), Enhancement in wind driven sand transport by electric fields, *Planetary and Space Science*, 57, 804-808.
5. Renno, N. O., and **J. F. Kok** (2008), Electrical activity and dust lifting on Earth, Mars, and beyond, *Space Science Reviews*, 137(1-4), 419-434.
4. **Kok, J. F.**, and N. O. Renno (2008), Electrostatics in wind-blown sand, *Physical Review Letters*, 100, 014501. (This paper was the subject of a "News & Views" article in **Nature**, 451, 773-4, 2008)
3. **Kok, J. F.**, and N. O. Renno (2008), The effects of electric forces on dust lifting: Preliminary studies with a numerical model, *Journal of Physics Conference Series*, 142, 012047.
2. Renno, N. O., **J. F. Kok**, H. Kirkham, and S. Rogacki (2008), A miniature sensor for electrical field measurements in dusty planetary atmospheres, *Journal of Physics Conference Series*, 142, 012075.

1. **Kok, J. F.**, and N. O. Renno (2006), Enhancement of the emission of mineral dust aerosols by electric forces, *Geophysical Research Letters*, 33, L19S10. (This paper was selected as an **American Geophysical Union Journal Highlight**)

FUNDED RESEARCH GRANTS

- 2020** Accounting for the Overlooked Effects of Coarse Desert Dust on Visibility and Communications, *Army Research Office (Earth Sciences Division)*, \$494,595 (**PI: Jasper Kok**, co-PI Marcelo Chamecki)
- 2019** Improving Optical Properties of Aspherical Dust for NASA Satellite and Ground-Based Instrument Applications, NASA Future Investigators in NASA Earth and Space Science and Technology (FINESST), \$90,000 (**PI: Jasper Kok**; Fellowship recipient: Yue Huang)
- 2019** Improving Skill in Predicting Sand and Dust Fluxes, U.S. Army Engineer Research and Development Center, \$226,250 (**PI: Jasper Kok**, co-PI Marcelo Chamecki)
- 2019** Solving the Coarse Dust Conundrum: What Processes Cause Large-scale Models to Underestimate Coarse Dust Transport? (1856389), *National Science Foundation (Physical and Dynamical Meteorology program)*, \$796,536 (**PIs: Jasper Kok** and Marcelo Chamecki)
- 2019** Switching Matlab courses to Python, UCLA Center for the Advancement of Teaching (CAT) Instructional Improvement Program (IIP), \$2,880, (**PIs: Jonathan Aurnou** and **Jasper Kok**)
- 2016** CAREER: The size of the Global Dust Cycle and its Radiative Impact on Climate (1552519), *National Science Foundation (Climate and Large-Scale Dynamics program)*, \$614,523, **PI**, 9/1/2016 – 8/31/2021
- 2015** Fundamental Advances in Predicting Aeolian Transport: Moving Beyond the Fluid Threshold and Precipitation Control Paradigms, *Army Research Office (Earth Sciences Division) W911NF-15-1-0417*, \$398,150 (**PI: Jasper Kok**, co-PI: Gregory Okin)
Generation of dust from active aeolian sand dunes, *United States – Israel Binational Science Foundation*, \$71,675 (**PIs: Jasper Kok** and Itzhak Katra)
Research Experiences for Undergraduates (REU) supplement to NSF AGS 1358621, \$10,374 (**PI: Jasper Kok**)
- 2014** Collaborative Research: From Turbulence to Weather and Climate: Unraveling the Multi-scale Nature of Dust and Sand Transport in the Atmospheric Boundary Layer (1358621), *National Science Foundation (Physical and Dynamical Meteorology program)*, \$344,270 (**PIs: Jasper Kok** and Marcelo Chamecki).
Aeolian sediment transport and landscape modification on Titan, *NASA Outer Planets Research*, \$70,826 (PI: Nathan Bridges; co-Is: Devon Burr, **Jasper Kok**, John Marshall, Claire Newman)
- 2013** Accounting for turbulent effects to improve prediction of sand and dust transport by wind, *NSF Earth Sciences Postdoctoral Fellowship*, \$170,000 (PI: Raleigh Martin; **hosting scientist: Jasper Kok**)
- 2011** Estimating the dust climate feedback by developing and using an improved parameterization of dust aerosol emission, *NSF Atmospheric and Geospace Sciences Postdoctoral Fellowship*, \$172,000 (**PI: Jasper Kok**; hosting scientist: Natalie M. Mahowald at Cornell University).

SUPERVISED GRADUATE STUDENTS AND POSTDOCTORAL SCHOLARS

- Sara Graves, AOS department PhD student, summer 2020 – current

- Alyson Fritzmann, AOS department PhD student, summer 2020 – current
- Min (Danny) Leung, AOS department PhD student, 2018 – current
- Adeyemi Adebisi, Postdoctoral Scholar, 2017 – current
 - Selected as 2019 *University of California President's Postdoctoral Fellow* (~2% funding rate)
 - Recipient of the 2021 *Chancellor's Award for Postdoctoral Research* (one of ~10 awards among ~1,400 postdocs at UCLA)
- Francesco Comola, *Swiss National Science Foundation Postdoctoral Mobility Postdoctoral Fellow*, 2018 - 2019
 - Formerly visiting PhD student, *École Polytechnique Fédérale de Lausanne*, 2016
- Yue Huang, AOS department PhD candidate, 2015 – current
 - Received a *Future Investigators in NASA Earth and Space Science and Technology fellowship (FINESST)* fellowship
- Raleigh Martin, Postdoctoral Scholar, 2013 – 2017
 - Received an *NSF Postdoctoral Research Fellowship*
- Francis Turney, AOS department PhD student, 2016 – 2018
 - Received an *NSF Graduate Research Fellowship*
- Peter (Guan) Li, AOS department graduate student, 2013 – 2014, M. Sc., 2014

SUPERVISED UNDERGRADUATE STUDENTS

- Alana Doderio, Math/AOS major, winter 2020 - current
- Robin Anthony-Petersen, physics major Fall 2019 - current
- Chloe Whicker, IoES major, Winter 2018 - current
- Kaylie Cohanin, AOS/Math major, Spring 2018 – Winter 2019
- Yuheng Zhang, Summer undergraduate researcher from University of Science and Technology, Summer 2018
- Yingxiao Zhang, Summer undergraduate researcher from Nanjing University, Summer 2018
- Yang (Kitty) Wang, AOS/Math major, Winter 2018 – Summer 2018
- Miye Nakashima, Math major, Spring – Summer 2017
- Kenyon Chow, IoES major, Winter – Summer 2016
- John Santiago, UCLA/SMC Summer Scholars Research Program, Summer 2015
- Francis Turney, AOS major, Fall 2014 – Winter 2016
- Olivia Miller, AOS major, Fall 2014
- Jessica De Guzman Canet, EPSS major, Fall 2014 – Winter 2015

TEACHING (student reviews average around 8.5/9)

A&OS 90 – Introduction to undergraduate research in the atmospheric and oceanic sciences (Winter 2018; Spring 2019, Winter 2020)

A&OS 101 – Fundamentals of Atmospheric Dynamics and Thermodynamics (Winter 2014, 2015; Fall 2015, 2016, 2017, 2018, 2019, 2020)

A&OS 144/222 – The Atmospheric Boundary Layer (Spring 2014, 2015; Winter 2017)

A&OS 200A – Introduction to Atmospheric and Oceanic Fluids (Fall 2015)

A&OS 245 – Aerosol – climate interactions (Spring 2020)

All my classes make extensive use of evidence-based techniques that education research suggests results in increased student retention and learning gains, especially for historically underrepresented students. These techniques include all-pupil response systems (clickers), in-class exercises, daily quizzes, and other active learning techniques.

INVITED SEMINARS AND CONFERENCE PRESENTATIONS

- 2019** American Geophysical Union Fall Meeting, San Francisco, CA
American Meteorological Society Annual Meeting, Austin, TX
- 2018** International Conference on Aeolian Research, Bordeaux, France
NASA's Goddard Space Flight Center, Greenbelt, MD
American Meteorological Society Annual Meeting, Austin, TX
- 2017** Workshop on Dust Emission, Chemistry & Transport, University of Notre Dame, IL
University of California, Santa Barbara, CA
University of Washington, Seattle, CA
Jet Propulsion Laboratory, California, CA
California Institute of Technology, California, CA
- 2016** American Geophysical Union Fall Meeting, San Francisco, CA
Geological Society of America annual meeting, Denver, CO
- 2015** Conference on Airborne Dust, Climate Change, and Human Health, Miami, FL
Texas A&M University, Department of Atmospheric Sciences / Department of Geology & Geophysics
American Meteorological Society Annual Meeting, Phoenix, AZ
- 2014** University of California – San Diego, Atmospheric Sciences, and Physical Oceanography
Chapman University, Science Forum Series, Orange, CA
- 2013** Kavli conference on Particle-Laden Flows in Nature, Santa Barbara, CA
Workshop on Airborne Mineral Dust Contaminants: Impacts on Human Health and the Environment, University of Arizona, Tucson, AZ
European Geophysical Union General Assembly, Vienna, Austria
- 2012** American Geophysical Union Fall Meeting, San Francisco, CA
Pennsylvania State University, Department of Meteorology
University of Illinois at Urbana – Champaign, Atmospheric and Oceanic Sciences
McGill University, Atmospheric and Oceanic Sciences
University of California – Los Angeles, Atmospheric and Oceanic Sciences Seminar
- 2011** American Geophysical Union Fall Meeting, San Francisco, CA
University of California – Irvine, Earth System Sciences Seminar
Minerva Gentner Symposium on Aeolian Processes, Ben-Gurion University, Israel
Gordon Research Conference on Radiation & Climate, Colby College, Waterville, ME
NSF review of the NCAR Earth System Laboratory (NESL), NCAR, Boulder, CO
University of Colorado – Boulder, JILA seminar
- 2010** Southwest Research Institute, Boulder, CO.
- 2009** American Geophysical Union Fall Meeting, San Francisco, CA
International Symposium on Multi-Phase Flow in the Atmospheric Boundary Layer, Lanzhou University, China.
Conference on electrification of water drops and ice particles, Telluride, Colorado.
ETH Zurich, Comphys-Group seminar, Switzerland.

PROFESSIONAL AND COMMUNITY SERVICE

- University:** **Chair** of the AOS Undergraduate Advisor & Curriculum Committee, Atmospheric and Oceanic Sciences since 2017; co-chair and member since 2013
Member of the AOS Graduate Advising and Curriculum Committee since 2020
Member of UCLA's Scientific Inquiry General Education Committee (2017 – present)
Chair of the Brian Bosart Award committee since 2015

Faculty Fellow, UCLA's Center for Diverse Leadership in the Science (2018 – present)

Various award, ad hoc merit review, faculty search, dissertation, and other committees

Professional: **Founding convener** of the recurring session “Mineral Dust Aerosols: From Small-Scale Insights to Large-Scale Understanding” at Fall Meetings of the American Geophysical Union since 2011.

Co-convener of the 2018, 2019, and 2020 AGU Fall Meeting sessions “Multi-sensor, Model, and Measurement Synergy: Aerosol Sources and Their Environmental Effects”

Outstanding student paper reviewer for AGU, AMS, and EGU meetings

Manuscript reviewer for the following journals: Aeolian Research; Applied Physics Letters; Atmospheric Chemistry and Physics; Atmospheric Environment; Boundary-Layer Meteorology; Climate Dynamics; Earth Surface Processes and Landforms; Environmental Research Letters; European Physical Journal E; Geografiska Annaler: Series A, Physical Geography; Geomorphology; Geophysical Research Letters; Geoscientific Model Development; Icarus; International Journal of Multiphase Flow; Journal of Climate; Journal of Geophysical Research – Atmospheres; Journal of Geophysical Research – Planets; Mars Journal; Nature; Nature Geoscience; Nature Communications; Nature Sustainability; New Journal of Physics; Proceedings of the National Academy of Sciences (PNAS), Quarterly Journal of the Royal Meteorological Society; Physical Review E; Physical Review Letters; Sedimentary Geology; Space Science Reviews

Proposal reviewer for the following programs: AGU Chapman conferences; Army Research Office (ARO); Deutsche Forschungsgemeinschaft; Israeli Science Foundation; Mars Fundamental Research Program (NASA); Moon and Mars Analog Mission Activities Program (NASA); Solar System Workings (NASA); AGS - Climate & Large-scale Dynamics (NSF); AGS – Physical and Dynamical Meteorology (NSF); AGS – Atmospheric Chemistry (NSF); BCS - Geography & Spatial Sciences (NSF); Frontiers in Earth System Dynamics (NSF); EAR - Instrumentation & Facilities (NSF); EAR – Geomorphology (NSF); PREEVENTS (NSF)

Community: Developer of **UCLA's Desert Dust and Climate Change Outreach Program**, which is a series of high school lesson plans intended to inspire students to pursue careers in the sciences by exposing them to hands-on and inquiry-driven research in the geosciences. These lesson plans use evidence-based teaching techniques and were designed in collaboration with UCLA's Center for Education Innovation and Learning in the Sciences (CEILS). The lesson plans are publicly available through the SERC Teach the Earth education portal (<https://serc.carleton.edu/teachearth/activities/212028.html>) and have been taught yearly by UCLA undergraduate and graduate students in high-need schools in the Los Angeles area since 2016.

Various interviews with popular media, such as NPR's All Things Considered, the Economist, Wired, and Physics Today.

Member: American Geophysical Union, European Geosciences Union, American Physical Society, American Meteorological Society