

EGU2020-20415

<https://doi.org/10.5194/egusphere-egu2020-20415>

EGU General Assembly 2020

© Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.



Etesian winds after major volcanic eruptions

Stergios Misios^{1,2}, Ioannis Logothetis³, Mads F. Knudsen^{1,2}, Christoffer Karoff^{1,3,4}, and Kleareti Tourpali³

¹Department of Geoscience, University of Aarhus, Aarhus C., Denmark (stergios.misios@physics.ox.ac.uk)

²CLIMATE Interdisciplinary Centre for Climate, University of Aarhus, Denmark

³Aristotle University of Thessaloniki, Greece

⁴Stellar Astrophysics Centre, Department of Physics and Astronomy, Aarhus University, Denmark

Etesians winds are northerly winds in the lower atmosphere, blowing over the Aegean basin from early summer to early autumn, regulating summer time heating levels. The interannual variability of Etesians is thought to be linked to the extended Indian Summer Monsoon and tropical Pacific Region. Here, we are investigating the response of Etesians to major volcanic eruptions with the aid of ensembles of historical simulations. Specifically, we are making use of the CESM Last Millennium and Large Ensemble simulations to investigate modelled Etesian changes in the post-eruption one to three years. We find consistent changes for all major eruptions over the last millennium of reduced amplitude peaking in the first year after the eruption. Interestingly, the Laki eruption shows a similar signal to the other major tropical Eruptions. Modelled results are compared to signals in the observational record and a possible mechanism connecting Etesians to the Indian Monsoon region is discussed.