Publication list – Petr Šácha (05/2024)

• *Peer-reviewed – reverse chronological ordering*

Fujiwara, M., Martineau, P., Wright, J. S., Abalos, M., **Šácha, P.,** Kawatani, Y., Davis, S. M., Birner, T., and Monge-Sanz, B. M.: Climatology of the terms and variables of transformed Eulerian-mean (TEM) equations from multiple reanalyses: MERRA-2, JRA-55, ERA-Interim, and CFSR, Atmospheric Chemistry and Physics, accepted (05/2024).

Šácha, P., Zajíček, R., Kuchař, A., Eichinger, R., Pišoft, P., & Rieder, H. E. (2024). Disentangling the advective Brewer-Dobson circulation change. Geophysical Research Letters, 51, e2023GL105919. https://doi.org/10.1029/ 2023GL105919

Hájková, D., and **Šácha, P.** (2023). Parameterized orographic gravity wave drag and dynamical effects in CMIP6 models. Climate Dynamics, 2023. https://doi.org/10.1007/s00382-023-07021-0.

Procházková, Z., Kruse, C. G., Alexander, M. J., Hoffmann, L., Bacmeister, J. T., Holt, L., Wright, C., Sato, K., Gisinger, S., Ern, M., Geldenhuys, M., Preusse, P., **& Šácha, P.** (2023). Sensitivity of mountain wave drag estimates on separation methods and proposed improvements. Journal of the Atmospheric Sciences. https://doi.org/10.1175/JAS-D-22-0151.1.

Karami, K., Borchert, S., Eichinger, R., Jacobi, C., Kuchar, A., Mehrdad, S., Pisoft, P. and **Šácha P.** (2023). The climatology of elevated stratopause events in the UA-ICON model and the contribution of gravity waves. Journal of Geophysical Research: Atmospheres, 128, e2022JD037907. https://doi.org/10.1029/2022JD037907

Kruse, C. G., Alexander, M. J., Hoffmann, L., van Niekerk, A., Polichtchouk, I., Bacmeister, J. T., Holt, L., Plougonven, R., **Šácha, P.,** Wright, C., Sato, K., Shibuya, R., Gisinger, S., Ern, M., Meyer, C. I., & Stein, O. (2022). Observed and Modeled Mountain Waves from the Surface to the Mesosphere near the Drake Passage, Journal of the Atmospheric Sciences, 79(4), 909-932.

Chávez, V.M.; Añel, J.A.; Garcia, R.R**.; Šácha, P.** (2022); Torre, L.d.l. Impact of Increased Vertical Resolution in WACCM on the Climatology of Major Sudden Stratospheric Warmings. Atmosphere, 13, 546. https://doi.org/10.3390/atmos13040546

Sacha, P., Kuchar, A., Eichinger, R., Pisoft, P., Jacobi, C., and Rieder, H. E. (2021). Diverse dynamical response to orographic gravity wave drag hotspots—a zonal mean perspective. Geophysical Research Letters, 48, e2021GL093305. https://doi.org/10.1029/2021GL093305

Pisoft, P., **Sacha, P.**, Polvani, L.M., Añel, J.A., de la Torre, L., Eichinger, R., Foelsche, U., Huszar, P., Jacobi, Ch., Karlicky, J., Kuchar, A., Miksovsky, J., Zak, M. and Rieder, H.E. (2021). Stratospheric contraction caused by increasing greenhouse gases. Environmental Research Letters, 16, 10.1088/1748-9326/abfe2b. http://dx.doi.org/10.1088/1748-9326/abfe2b

Samtleben, Nadja, Aleš Kuchař, **Petr Šácha**, Petr Pišoft, and Christoph Jacobi. 2020. "Mutual Interference of Local Gravity Wave Forcings in the Stratosphere" Atmosphere 11, no. 11: 1249. https://doi.org/10.3390/atmos11111249

Eichinger, R. and **Šácha, P.** Overestimated acceleration of the advective Brewer– Dobson circulation due to stratospheric cooling. QJR Meteorol Soc. 2020; 146: 3850– 3864. https://doi.org/10.1002/qj.3876

Kuchar, A., **Sacha, P.,** Eichinger, R., Jacobi, C., Pisoft, P., and Rieder, H. E. (2020). On the intermittency of orographic gravity wave hotspots and its importance for middle atmosphere dynamics, Weather Clim. Dynam., 1, 481–495, https://doi.org/10.5194/wcd-1-481-2020.

Eichinger, R., Garny, H., **Šácha, P.,** Danker, J., Dietmüller, S., and Oberländer-Hayn, S. (2020). Effects of missing gravity waves on stratospheric dynamics; part 1: climatology. Clim Dyn 54, 3165–3183. https://doi.org/10.1007/s00382-020-05166-w

Samtleben, N., Kuchař, A., **Šácha, P**., Pišoft, P., and Jacobi, C. (2020). Impact of local gravity wave forcing in the lower stratosphere on the polar vortex stability: effect of longitudinal displacement, Ann. Geophys., 38, 95–108, https://doi.org/10.5194/angeo-38- 95-2020.

Samtleben, N., Jacobi, C., Pišoft, P., **Šácha, P.,** and Kuchař, A. (2019). Effect of latitudinally displaced gravity wave forcing in the lower stratosphere on the polar vortex stability, Ann. Geophys., 37, 507–523, https://doi.org/10.5194/angeo-37-507-2019.

Šácha, P., Eichinger, R., Garny, H., Pišoft, P., Dietmüller, S., de la Torre, L., Plummer, D. A., Jöckel, P., Morgenstern, O., Zeng, G., Butchart, N., and Añel, J. A. (2019). Extratropical age of air trends and causative factors in climate projection simulations, Atmos. Chem. Phys., 19, 7627–7647, https://doi.org/10.5194/acp-19-7627-2019.

Eichinger, R., Dietmüller, S., Garny, H., **Šácha, P.,** Birner, T., Bönisch, H., Pitari, G., Visioni, D., Stenke, A., Rozanov, E., Revell, L., Plummer, D. A., Jöckel, P., Oman, L., Deushi, M., Kinnison, D. E., Garcia, R., Morgenstern, O., Zeng, G., Stone, K. A., and Schofield, R. (2019). The influence of mixing on the stratospheric age of air changes in the 21st century, Atmos. Chem. Phys., 19, 921–940, https://doi.org/10.5194/acp-19-921-2019.

Šácha, P., Miksovsky, J., and Pisoft, P. (2018). Interannual variability in the gravity wave drag – vertical coupling and possible climate links, Earth Syst. Dynam., 9, 647–661, https://doi.org/10.5194/esd-9-647-2018.

Pisoft, P., **Sacha, P**., Miksovsky, J., Huszar, P., Scherllin-Pirscher, B., and Foelsche, U. (2018). Revisiting internal gravity waves analysis using GPS RO density profiles: comparison with temperature profiles and application for wave field stability study, Atmos. Meas. Tech., 11, 515–527, https://doi.org/10.5194/amt-11-515-2018.

Šácha, P., Lilienthal, F., Jacobi, C., and Pišoft, P. (2016). Influence of the spatial distribution of gravity wave activity on the middle atmospheric dynamics, Atmos. Chem. Phys., 16, 15755–15775, https://doi.org/10.5194/acp-16-15755-2016.

Šácha, P., Kuchař, A., Jacobi, C., and Pišoft, P.: Enhanced internal gravity wave activity and breaking over the northeastern Pacific–eastern Asian region, Atmos. Chem. Phys., 15, 13097–13112, https://doi.org/10.5194/acp-15-13097-2015, 2015.

Kuchar, A., **Sacha, P.,** Miksovsky, J., and Pisoft, P.: The 11-year solar cycle in current reanalyses: a (non)linear attribution study of the middle atmosphere, Atmos. Chem. Phys., 15, 6879–6895, https://doi.org/10.5194/acp-15-6879-2015, 2015.

Šácha, P., Foelsche, U., and Pišoft, P.: Analysis of internal gravity waves with GPS RO density profiles, Atmos. Meas. Tech., 7, 4123–4132, https://doi.org/10.5194/amt-7-4123-2014, 2014.

• *Non-quality assured*
Procházková, Zuzana, and **Šácha, Petr** (2019). "Nambova mechanika v dynamice atmosféry." Pokroky matematiky, fyziky a astronomie, 64.4, 220-228. <http://eudml.org/doc/295021>.

Šácha, P. (2017). New Perspective on the Role of Gravity Waves in the Stratospheric Dynamics and Variability. Dissertation thesis, Univerzita Karlova, Matematicko-fyzikální fakulta, Katedra fyziky atmosféry. http://hdl.handle.net/20.500.11956/2469

Lilienthal, F., **P. Šácha** and Ch. Jacobi, 2015: Gravity Wave effects on a Modeled Mean Circulation, Rep. Inst. Meteorol. Univ. Leipzig, http://home.uni-leipzig.de/jacobi/docs/Lilienthal_2015_LIM_GW.pdf

Šácha, Petr. Internal Gravity Wave Activity Hotspot and Implications for the Middle Atmospheric Dynamics. In L. Ouwehand. ESA SP-735. : ESA Communications, 2015. ISBN 978-92-9221-299-5.

Šácha, P., Stratospheric Dynamics and Coupling with Troposphere and Mesosphere, WDS'13 Proceedings of Contributed Papers, Part III, 62–66, 2013. http://www.mff.cuni.cz/veda/konference/wds/proc/pdf13/WDS13_311_f8_Sacha.pdf

Zak M., **Sacha P**., Pisoft P. (2013): On the use of the CM-SAF cloud-data in the Czech republic, in Proceedings of SPIE - The International Society for Optical Engineering, 8795, art. no. 87950M, DOI: 10.1117/12.2027727.