

## **Prof. Dr. Victor Brovkin**

Research group leader, Max-Planck-Institut für Meteorologie  
Bundesstraße 53, 20146 Hamburg, Germany  
+49 40 41173-339, victor.brovkin@mpimet.mpg.de

### **Selected research topics and accomplishments**

*Topics:* Studies of the role of the terrestrial biosphere in the Earth System in present, past, and future climate, analysis of land-atmosphere interactions and feedbacks between global carbon cycle and climate with a focus on high latitudes processes

*Accomplishments:* Development and application of dynamic global vegetation models as a part of Earth System models of full and intermediate complexity; first analysis of historical land use effects on climate; studies of multiple states and abrupt changes in climate using models and observations, with a special focus on the northern high latitudes; evaluation of vegetation models against satellite data; investigation of wetlands and permafrost carbon roles in the global carbon and methane cycles.

### **Professional record and academic education**

Since 2008	Head of Climate-Biosphere Interactions group, Max Planck Institute for Meteorology, Hamburg
2015	Professor (§17), Centrum für Erdsystemforschung und Nachhaltigkeit, Universität Hamburg
2011	Habilitation, Meteorology, Universität Hamburg
1994 – 2008	Research Scientist, Potsdam-Institut für Klimafolgenforschung (PIK), Potsdam, Germany
1994	Research Scientist, Oboukhov Institute for Atmospheric Physics of Russian Academy of Sciences, Moscow, Russia
1988	Dissertation, System Control, Lomonosov Moscow State University, Russia
1987 – 1993	Research Scientist, Research Institute for Agricultural Ecology and Radiology, Obninsk, Russia
1984	Diploma, Mathematics, Lomonosov Moscow State University, Russia

### **Honors, distinctions and awards**

2021-2027	Corresponding PI of ERC Synergy grant Q-ARCTIC
2018-2021	Review Editor of IPCC AR6, WGI, Chapter 5 (Carbon Cycle)
2018-2020	ISI Highly Cited Researcher
2017-2021	Co-Chair of AIMES (Analysis, Integration and Modelling of the Earth System), Global Research Project of Future Earth
Since 2016	Member of Academia Europaea
Since 2015	Member of Scientific Steering Committees of CMIP6 projects (C4MIP, LUMIP)
2013 - 2021	Member of Scientific Steering Committee of AIMES
2008 – 2018	Editor of the EGU journal “Biogeosciences”
2010 – 2013	Lead author of IPCC AR5, WG I, Ch. 6 (Carbon and Other Biogeochemical Cycles)
2010 – 2013	Scientific Advisor of Marie-Curie Training Network GREENCYCLES II
2006 – 2007	Contributing author of IPCC AR4 WGI
2005 – 2015	Editor of the EGU journal “Climate of the Past”
2003 – 2005	Lead author of Millennium Ecosystem Assessment, WG I: Conditions and Trends

### **Supervisory work**

Since 2008 Supervision of 10 Diploma/MSc students, 9 PhD students, and 8 Postdocs

## 10 selected publications

Wilkenskjeld, S., Miesner, F., Overduin, P., Puglini, M. & **Brovkin, V.**, 2022: Strong increase in thawing of subsea permafrost in the 22<sup>nd</sup> century caused by anthropogenic climate change. *The Cryosphere*, 16, 1057-1069.

**Brovkin, V.**, Brook, E., Williams, J., Bathiany, S., Lenton, T., Barton, M., DeConto, R., Donges, J., Ganopolski, A., McManus, J., Praetorius, S., de Vernal, A., Abe-Ouchi, A., Cheng, H., Claussen, M., Crucifix, M., Gallopín, G., Iglesias, V., Kaufman, D., Kleinen, T., Lambert, F., van der Leeuw, S., Liddy, H., Loutre, M.-F., McGee, D., Rehfeld, K., Rhodes, R., Seddon, A., Trauth, M., Vanderveken, L. & Yu, Z., 2021: Past abrupt changes, tipping points and cascading impacts in the Earth system. *Nature Geoscience*, 14, 550-558. doi:10.1038/s41561-021-00790-5

de Vrese, P. & **Brovkin, V.**, 2021: Timescales of the permafrost carbon cycle and legacy effects of temperature overshoot scenarios. *Nature Communications*, 12: 2688. doi:10.1038/s41467-021-23010-5

Abis, B., **Brovkin, V.**, 2019: Alternative tree-cover states of the boreal ecosystem: a conceptual model. *Global Ecology and Biogeography*, 28, 612-627. doi:10.1111/geb.12880

**Brovkin, V.**, Lorenz, S., Raddatz, T., Ilyina, T., Heinze, M., Stemmler, I., Toohey, M., Claussen, M., 2019: What was the source of the atmospheric CO<sub>2</sub> increase during Holocene? *Biogeosciences*, 16, 2543-2555. doi:10.5194/bg-16-2543-2019

Winkler, A., Myneni, R., Alexandrov, G., **Brovkin, V.** 2019: Earth system models underestimate Carbon fixation by plants in the high latitudes. *Nature Communications*, 10: 885. doi:10.1038/s41467-019-08633-z

Willeit, M., Ganopolski, A., Calov, R., **Brovkin, V.**, 2019: Mid-Pleistocene transition in glacial cycles explained by declining CO<sub>2</sub> and regolith removal. *Science Advances*, 5, doi:10.1126/sciadv.aav7337

Kleinen, T., **Brovkin, V.**, 2018: Pathway-dependent fate of permafrost region carbon. *Environmental Research Letters*, 13: 094001. doi:10.1088/1748-9326/aad824

Bathiany, S., D. Notz, T. Mauritsen, G. Rädel, G., **V. Brovkin**, 2016: On the mechanism of Arctic winter sea ice collapse. *Journal of Climate*, 29, 2703-2719, doi:10.1175/JCLI-D-15-0466.1

**Brovkin, V.**, L. Boysen, V. Arora, J. Boisier, P. Cadule, L. Chini, M. Claussen, P. Friedlingstein, V. Gayler, B. van den Hurk, G. Hurtt, C. Jones, E. Kato, N. de Noblet-Ducoudré, F. Pacifico, J. Pongratz, M. Weiss, 2013: Effect of anthropogenic land-use and land cover changes on climate and land carbon storage in CMIP5 projections for the 21st century. *Journal of Climate*, 26, 6859-6881, doi:10.1175/JCLI-D-12-00623.1