



Photo: Daniela Brugger, 2010

Georg Kaser

Date of birth: 15 April 1953

Place of birth: Meran, Italy

Nationality: Italian
married

University studies: Meteorology and Geography, University of Innsbruck, 1973 - 1984

Doctoral thesis: Verdunstung von Schnee und Eis (1984)

Habilitation thesis: Gletscher in den Tropen (1996)

Scientific interests

Glacier climate interaction on different temporal and spatial scales from global and centennial to microclimate processes at the ice atmosphere interface; glacier hydrology from water availability and water demand perspectives. Glaciers as indicators of climate and climate change and as contributors to sea level rise and regional hydrology.

Scientific field experience

Alps, Rwenzori and Kilimanjaro (East Africa), Cordillera Blanca (Perú), Cordillera Real (Bolivia), Himachal Pradesh and Langtang (Himalaya); Greenland

- Since 2010* Full professor for Climate and Cryospheric Research at the Institute for Meteorology and Geophysics, University of Innsbruck; spokesperson of the University Centre of Climate and Cryosphere. Member of the University Senate.
- 2013* Wissenschaftspreis für außergewöhnliche Forschungsleistung der Stiftung Südtiroler Sparkasse
- 2011 - 2014* Austrian Science Fund (FWF): member of board.
- 2010 - 2013* IPCC 5th Assessment Report: Lead Author WG1, Chapter 4.
- 2007 - 2008* IPCC Technical Paper on Water and Climate Change: Lead Author.
- 2009 - 2011* President of the IUGG International Association of Cryospheric Sciences (IACS).
- 2005 - 2009* President of the IUGG Commission for the Cryospheric Sciences (ICSI).
- 2004 - 2007* IPCC 4th Assessment Report: Lead Author WG1, Chapter 4.
- 1997 - 2010* Associate professor at the Institute of Geography, University of Innsbruck.
- 1985 - 1997* Assistant professor at the Institute of Geography, University of Innsbruck.
- 1984 - 1985* Assistant professor at the Institute of Meteorology and Geophysics, University of Innsbruck.
- 1984* 2 months fellowship of the Schweizerische Naturforschende Gesellschaft at the Swiss Federal Institute of Technology in Zurich; Senior staff member of the Juneau Icefield Research Project in Alaska.
- 1973 - 1982* Student Assistant in the research project "Kombinierte Studien von Eis-, Wasser- und Wärmehaushalt vergletscheter Einzugsgebiete" in the Rofen Valley (Oetztal) as part of

the "International Hydrological Decade (IHD)", the "International Hydrological Project (IHP)" and of "Hydrologie Österreich 7".

Peer-reviewed publications (past 5 years)

- Pfeffer W. T., A. A. Arendet, A. Bliss, T. Bolch, J. G. Cogley, A. S. Gardner, J.-O. Hagen, R. Hock, **G. Kaser**, C. Kienholz, E. S. Miles, G. Moholdt, N. Mölg, F. Paul, V. Radic, P. Rastner, B. H. Raup, J. Rich, M. J. Sharp & the RGI Consortium (2014): The Randolph Glacier Inventory: a globally complete inventory of glaciers. *Journal of Glaciology*.
- Vaughan, D. G., J. C. Comiso, I. Allison, J. Carrasco, **G. Kaser**, R. Kwok, P. Mote, T. Murray, F. Paul, J. Ren, E. Rignot, O. Solomina, K. Steffen & T. Zhang. 2013. Observations: Cryosphere. In *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. T. F. Stocker, D. Qin, G.-K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex & P. M. Midgley. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.
- Gardner, A. S., G. Moholdt, J. G. Cogley, B. Wouters, A. A. Arendt, J. Wahr, E. Berthier, R. Hock, W. T. Pfeffer, **G. Kaser**, S. R. M. Ligtenberg, T. Bolch, M. J. Sharp, J. O. Hagen, M. R. van den Broeke & F. Paul (2013) A Reconciled Estimate of Glacier Contributions to Sea Level Rise: 2003 to 2009. *Science*, 340, 852-857.
- Gurgiser W, Marzeion B, Nicholson L, Ortner M, **Kaser G.** (2013) Modeling energy and mass balance of Shallap Glacier, Peru. *The Cryosphere*. 7:1787 - 1802.
- Gurgiser W, Mölg T, Nicholson L, **Kaser G.** (2013) Mass balance model parameter transferability on a tropical glacier. *Journal of Glaciology*. 59:845 - 858.
- Mölg T, Cullen NJ, Hardy D, **Kaser G**, Nicholson L, Prinz R, et al.. (2013) East African glacier loss and climate change: Corrections on the UNEP article "African without ice and snow". *Environmental Development*. 6:1 - 6.
- Nicholson L, Prinz R, Mölg T, **Kaser G.** (2013) Micrometeorological conditions and surface mass and energy fluxes on Lewis glacier, Mt Kenya, in relation to other tropical glaciers. *The Cryosphere*. 7:1205 - 1225.
- Paal P, Brugger H, **Kaser G**, Putzer G, Tiefenthaler W, Wenzel V. (2013) Surviving 6 days in a crevass. *The Lancet*. 381:506.
- Painter TH, Flanner MG, **Kaser G**, Marzeion B, VanCuren RA, Abdalati W. End of the Little Ice Age in the Alps forced by industrial black carbon. (2013) *Proceedings of the National Academy of Sciences*. 110:15216 - 15221.
- Diemberger, H., K. Hastrup, S. Schaffer, C. F. Kennel, D. Sneath, M. Bravo, H.-F. Graf, J. Hobbs, J. Davis, M. L. Nodari, G. Vassena, R. Irvine, C. Evans, M. Strathern, M. Hulme, **G. Kaser & B. Bodenhorn** (2012) Communicating Climate Knowledge Proxies, Processes, Politics. *Current Anthropology*, 53, 226-244.
- Prinz R, Nicholson L, **Kaser G.** Variations of the Lewis Glacier, Mount Kenya, 2004-2012. (2012) *Erdkunde*. 66:255 - 262.
- Marzeion, B., Hofer, M., Jarosch, A. H., **Kaser, G.**, and Mölg, T. (2012) A minimal model for reconstructing interannual mass balance variability of glaciers in the European Alps, *The Cryosphere*, 6, 71-84, doi:10.5194/tc-6-71-2012
- Ajai, L. Bengtsson, D. Breashears, P.J. Crutzen, S. Fuzzi, W. Haeberli, W.W. Immerzeel, **G. Kaser**, C. Kennel, A. Kulkarni, R. Pachauri, T. H. Painter, J. Rabassa, V. Ramanathan, A. Robock, C. Rubbia, L. Russell, M. Sánchez Sorondo, H.J. Schellnhuber, S. Sorooshian, T. F. Stocker, L.G. Thompson, O.B. Toon, D. Zaelke (2011). *Fate of Mountain Glaciers in the Anthropocene*. A Report by the Working Group Commissioned by the Pontifical Academy of Sciences. The Vatican, May 2, 2011, pp. 15.
- Prinz, R., A. Fischer, L. Nicholson, and **G. Kaser** (2011): Seventy-six years of mean mass balance rates derived from recent and re-evaluated ice volume measurements on tropical Lewis Glacier, Mount Kenya, *Geophysical Research Letters*, 38, L20502, doi:10.1029/2011GL049208
- Cogley J.G., R. Hock, L.A. Rasmussen, A.A. Arendt, A. Bauder, R.J. Braithwaite, P. Jansson, **G. Kaser**, M. Möller, L. Nicholson, and M. Zemp (2011): *Glossary of Glacier Mass Balance and Related Terms*. IHP-VII Technical Documents in Hydrology No. 86, IACS Contribution No. 2, UNESCO-IHP, Paris.
- Kargel J. an 10 others, incl. **G. Kaser G.** (2011): ASTER Imaging and Analysis of Glacier Hazards. In: Ramachandran B. , C. O. Justice, and M.J. Abrams (eds.): *Land Remote Sensing and Global Environmental Change: NASA's Earth Observing System and the Science of Terra and Aqua*. Springer: New York, 325-373.

- Mölg, T., and **G. Kaser** (2011): A new approach to resolving climate-cryosphere relations: Downscaling climate dynamics to glacier-scale mass and energy balance without statistical scale linking. *Journal of Geophysical Research*, 116, D16101.
- Kaser, G.**, M. Großhauser, and B. Marzeion (2010): Contribution potential of glaciers to water availability in different climate regimes. *Proceedings of the National Academy of Sciences*, 107, 20223-20227.
- Hofer, M., T. Mölg, B. Marzeion, and **G. Kaser** (2010): Statistical downscaling of NCEP/NCAR reanalysis to high-resolution air temperature and specific humidity above a glacier surface (Cordillera Blanca, Peru). *Journal of Geophysical Research*, 115, D12120, doi:10.1029/2009JD012556.
- Kaser, G.**, T. Mölg, N.J. Cullen, D.R. Hardy, and M. Winkler (2010): Is the decline of ice on Kilimanjaro unprecedented in the Holocene? *The Holocene*, 20, 1079-1091.
- Mölg, T., N.J. Cullen, and **G. Kaser** (2010): Glacier loss on Kilimanjaro is an exceptional case. *Proceedings of the National Academy of Sciences USA*, 107, E68.
- Winkler, M., **G. Kaser**, N.J. Cullen, T. Mölg, D.R. Hardy, and W.T. Pfeffer (2010): Land-based marginal ice cliffs: focus on Kilimanjaro. *Erdkunde*, 64, 2, 179-193.
- Cogley, J.G., J.S. Kargel, **G. Kaser**, and C.J. van der Veen (2010): Tracking the Source of Glacier Misinformation. *Science*, 327, 522.
- Kaser, G.** and Allison, I. (2009): The Snows of Kilimanjaro*: A critical comment on Numerical Simulations of the Role of Land Surface Conditions on the Climate of Mt. Kilimanjaro Region. *CLIVAR Exchanges Newsletter*, 48, 7-9.
- Mölg, T., N.J. Cullen, D.R. Hardy, M. Winkler, and **G. Kaser** (2009): Quantifying climate change in the tropical mid troposphere over East Africa from glacier shrinkage on Kilimanjaro. *Journal of Climate*, 22, 4162-4181.
- Mölg, T., N.J. Cullen, and **G. Kaser** (2009): Solar radiation, cloudiness and longwave radiation over low-latitude glaciers: Implications for mass balance modeling. *Journal of Glaciology*, 55, 292-302.
- Winkler, M., I. Juen, T. Mölg, P. Wagnon, J. Gómez, and **G. Kaser** (2009): Measured and modelled sublimation on the tropical Glaciar Artesonraju. *The Cryosphere*, 3, 21-30.

Innsbruck, Meran, Karthaus; April 2014