

# Curriculum vitae Lennert Stap

## PERSONALIA

Name: Dr. Lennert Bastiaan Stap  
Date of birth: 23-01-1988  
Nationality: Netherlands  
Websites: [https://www.researchgate.net/profile/L\\_Stap](https://www.researchgate.net/profile/L_Stap)  
<http://orcid.org/0000-0002-2108-3533>

## PROFESSIONAL EXPERIENCE

2016–present Postdoctoral researcher at Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research  
2012–2016 PhD student at Institute for Marine and Atmospheric research Utrecht (IMAU), Utrecht University  
2012 Junior researcher at Global Climate Division of the Royal Netherlands Meteorological Institute (KNMI)  
2011–2012 Internship at Global Climate Division of KNMI

## EDUCATION

2012–2016 PhD, Faculty of Geosciences, Utrecht University  
*PhD thesis: Interaction of ice sheets and climate on geological time scales*  
2009–2012 Master of Meteorology, Physical Oceanography & Climate at Utrecht University  
*Master thesis: Single-column modeling of the difference between the response of forest and grassland surface energy fluxes to heat waves*  
2006–2010 Bachelor of Physics & Astronomy at Utrecht University  
*Bachelor thesis: Refreezing on the Greenland ice sheet, a comparison of two parametrizations*  
2000–2006 Gymnasium (pre-university education) at Het Nieuwe Lyceum, Bilthoven

## PUBLICATIONS

### *In review*

**Stap, L.B.**, G. Knorr, and G. Lohmann, 2020. Anti-phased Miocene ice volume and CO<sub>2</sub> changes by transient Antarctic ice sheet variability. *In review*

Fisher, G.B., L.V. Luna, W.H. Amidon, D.W. Burbank, B. de Boer, **L.B. Stap**, B. Bookhagen, V. Godard, M.E. Oskin, R.N. Alonso, E. Tuenter, and L.J. Lourens, 2020. Milankovitch-paced erosion in the Central Andes. *In review*

Knorr, G., S. Barker, X. Zhang, G. Lohmann, X. Gong, P. Gierz, C. Stepanek, and **L.B. Stap**, 2020. A salty deep ocean as a prerequisite for glacial termination. *In review*

### *Peer-reviewed*

2019

13. **Stap, L.B.**, P. Köhler, P., and G. Lohmann, 2019. Including the efficacy of land ice changes in deriving climate sensitivity from paleodata. *Earth Syst. Dynam.*, **10**, 333-345. doi:10.5194/esd-10-333-2019

12. **Stap, L.B.**, J. Sutter, G. Knorr, M. Stärz, and G. Lohmann, 2019. Transient variability of the Miocene Antarctic ice sheet smaller than equilibrium differences. *Geophys. Res. Lett.*, **46**, 4288-4289. doi: 10.1029/2019GL082163

2018

11. Köhler, P., G. Knorr, **L.B. Stap**, A. Ganopolski, B. de Boer, R.S.W. van de Wal, S. Barker, and L.H. Rüpke, 2018. The effect of obliquity-driven changes on paleoclimate sensitivity during the late Pleistocene. *Geophys. Res. Lett.*, **45**, 6661-6671. doi:10.1029/2018GL077717

10. **Stap, L.B.**, R.S.W. van de Wal, B. de Boer, P. Köhler, J.H. Hoencamp, G. Lohmann, E. Tuenter, and L.J. Lourens, 2018. Modeled influence of land ice and CO<sub>2</sub> on polar amplification and paleoclimate sensitivity during the past 5 million years. *Paleoceanography and Paleoclimatology*, **33**, 381–394. doi:10.1002/2017PA003313

2017

9. Köhler, P., **L.B. Stap**, A.S. von der Heydt, B. de Boer, R.S.W. van de Wal, and J. Bloch-Johnson, 2017. A state-dependent quantification of climate sensitivity based on paleo data of the last 2.1 million years. *Paleoceanography*, **32**, doi:10.1002/2017PA003190.

- 2016
8. **Stap, L.B.**, R.S.W. van de Wal, B. de Boer, R. Bintanja, and L.J. Lourens, 2017. The influence of ice sheets on temperature during the past 38 million years inferred from a one-dimensional ice sheet–climate model. *Clim. Past*, **13**, 1243-1257, doi:10.5194/cp-13-1243-2017
7. Von der Heydt, A.S. and **others**, 2016. Lessons on climate sensitivity from past climate changes. *Curr. Clim. Change Rep.*, doi:10.1007/s40641-016-0049-3.
6. **Stap, L.B.**, R.S.W. van de Wal, B. de Boer, R. Bintanja, and L.J. Lourens, 2016. The MMCO-EOT conundrum: Same benthic  $\delta_{18}\text{O}$ , different  $\text{CO}_2$ . *Paleoceanography*, **31**, doi:10.1002/2016PA002958.
5. **Stap, L.B.**, B. de Boer, M. Ziegler, R. Bintanja, L.J. Lourens and R.S.W. van de Wal, 2016.  $\text{CO}_2$  over the past 5 million years: Continuous simulation and new  $\delta_{11}\text{B}$ -based proxy data. *Earth Planet. Sci. Lett.*, **439**, 1-10, doi:10.1016/j.epsl.2016.01.022.
- 2015
4. Köhler, P., B. de Boer, A.S. von der Heydt, **L.B. Stap**, and R.S.W. van de Wal, 2015. On the state-dependency of the equilibrium climate sensitivity during the last 5 million years. *Clim. Past*, **11**, 1801-1823, doi:10.5194/cp-11-1801-2015
- 2014
3. **Stap L.B.**, R.S.W. van de Wal, B. de Boer, R. Bintanja, L.J. Lourens, 2014. Interactions of ice sheets and climate during the past 800,000 years, *Clim. Past*, **10**, 2135-2152, doi:10.5194/cp-10-2135-2014.
2. **Stap, L.B.**, B.J.J.M. van den Hurk, C.C. van Heerwaarden and R.A.J. Neggers, 2014. Modelled contrast in the response of the surface energy balance to heatwaves for forest and grassland. *J. Hydrometeor.*, **15**, 973-989, doi:10.1175/JHM-D-13-029.1
- 2012
1. Reijmer, C.H., M.R. van den Broeke, X. Fettweis, J. Ettema, and **L.B. Stap**, 2012. Refreezing on the Greenland ice sheet: a comparison of parameterizations. *The Cryosphere*, **6**, 743-762, doi:10.5194/tc-6-743-2012.
- Other scientific*
- 2016
- Stap, L.B.**, R.S.W. van de Wal: De rol van ijskappen in klimaatverandering gedurende de afgelopen 5 miljoen jaar. *Meteorologica*, **25(3)**, 10-13.
- 2014
- Stap, L.B.**: Wisselwerking tussen ijskappen en klimaat gedurende de laatste 800.000 jaar. *Geo.brief*, **5**, 14-15.

2013

**Stap, L.B.**, R.S.W. van de Wal, B. de Boer: Interactie tussen ijs en klimaat op geologische tijdschalen. *Meteorologica*, **22 (4)**, 14.

## EXTRA-CURRICULAR EDUCATION

- 2014 Course “Presenting in English”, Babel Institute.  
Course “Writing in English for Publication”, Babel Institute.
- 2013 Karthaus Summer School on Ice Sheets and Glaciers in the Climate System, Italy.  
Urbino Summer School in Paleoclimatology, Italy.
- 2006 Cambridge English Certificate: Proficiency Level.

## TEACHING

- 2014/2015 Teacher’s assistant (T.A.) *Fluid Mechanics and Transport Phenomena*, 2<sup>nd</sup> year Physics undergraduate course
- 2013 T.A. *Hydrodynamics and Turbulence*, 2<sup>nd</sup> year Physics undergraduate course

## (CO-)SUPERVISED STUDENTS

- 2020 Lotanna Ucheagu, M.Sc student: *The influence of ice shelves on the Antarctic ice sheet during the Miocene*
- 2016 Jori Hoencamp, B.Sc student: *Modeling polar amplification over the past 5 million years*
- 2015 Christiaan van Dalum, B.Sc student: *Modelling glacial inception of Antarctica during the Eocene-Oligocene boundary*

## CONFERENCE CONTRIBUTIONS (FIRST AUTHOR ONLY)

- 2020 **L.B. Stap**, G. Knorr, G. Lohmann: Concurrent Miocene Antarctic ice sheet growth and CO<sub>2</sub> increase caused by disequilibrium. Display: EGU General Assembly 2020 (Sharing Geosciences Online), online format.
- 2019 **L.B. Stap**, J. Sutter, G. Knorr, I. Niezgodzki, G. Lohmann: Modeled difference between the Oligocene and Miocene Antarctic ice sheet. Poster: EGU General Assembly 2019, Vienna, Austria.

- 2018 **L.B. Stap**, J. Sutter, G. Knorr, M. Stärz, G. Lohmann: The impact of carbon dioxide changes on Miocene Antarctic ice sheet variability. Oral: EGU General Assembly 2018, Vienna, Austria.
- L.B. Stap**, R.S.W. van de Wal, B. de Boer, P. Köhler, J.H. Hoencamp, G. Lohmann, E. Tuenter, and L.J. Lourens, 2018. The influence of land ice and CO<sub>2</sub> on polar amplification and specific equilibrium climate sensitivity during the past 5 million years. Poster: EGU General Assembly 2018, Vienna, Austria.
- 2017 **L.B. Stap**, J. Sutter, G. Knorr, M. Stärz, G. Lohmann: Miocene Antarctic ice sheet dependent on CO<sub>2</sub> and bedrock topography. Poster: SCAR PAIS Conference 2017, Trieste, Italy.
- 2016 **L.B. Stap**, B. de Boer, R. Bintanja, L.J. Lourens, R.S.W. van de Wal: Interaction of ice sheets and climate during the past 38 million years. Poster: ICP 2016, Utrecht, Netherlands. *Won the Poster Award*
- L.B. Stap**, R.S.W. van de Wal, B. de Boer, R. Bintanja, L.J. Lourens: The MMCO-EOT conundrum: same benthic δ<sub>18</sub>O, different CO<sub>2</sub>. Poster: EGU General Assembly 2016, Vienna, Austria.
- 2015 **L.B. Stap**, R.S.W. van de Wal, B. de Boer, R. Bintanja, L.J. Lourens: The MMCO-EOT conundrum: same benthic δ<sub>18</sub>O, different CO<sub>2</sub>. Oral: AGU Fall Meeting 2015, San Francisco, USA.
- L.B. Stap**, M. Ziegler, B. de Boer, R. Bintanja, L.J. Lourens, R.S.W. van de Wal: Model reconstruction of CO<sub>2</sub> over the past five million years. Oral: EGU General Assembly 2015, Vienna, Austria.
- L.B. Stap**, R.S.W. van de Wal, B. de Boer, R. Bintanja, L.J. Lourens: Interaction of ice sheets and climate during the past 800,000 years. Oral: IODP Annual Meeting 2015, Utrecht, The Netherlands.
- 2014 **L.B. Stap**, R.S.W. van de Wal, B. de Boer, R. Bintanja, L.J. Lourens: Interactions of ice sheets and climate during the past 800,000 years. Oral: 3<sup>rd</sup> PMIP 3 workshop, Namur, Belgium
- L.B. Stap**, R.S.W. van de Wal, B. de Boer, R. Bintanja, L.J. Lourens: Large scale interaction between ice sheets and climate during the past 800,000 years. Poster: EGU General Assembly 2014, Vienna, Austria

## PROGRAMMING EXPERIENCE

Fortran(77 and 90), C, R, Matlab, NCL, Mathematica, Python