Frederik J Simons, Ph. D.

fjsimons@princeton.edu / www.frederik.net

ADDRESS

Department of Geosciences
Guyot Hall 321b
Princeton, NJ 08544

Faculty Assistant:
Ms. Dawn Reading, (609) 258-1589
reading@princeton.edu

POSITIONS

2013–present	*Associate Professor of Geosciences, with continuing tenure*, Princeton University;
2012–present	*Associated Faculty, Program in Applied & Computational Mathematics*;
2010–2013	*Dusenbury University Preceptor of Geological and Geophysical Sciences.*
2006–2013	*Assistant Professor of Geosciences*, Princeton University;
2014–2015	*Visitor*, Institute for Advanced Study (Astrophysics);
2014–2015	*Visiting Fellow*, KU Leuven;
2013	*Visitor*, U. Cambridge (Bullard Laboratories);
2012	*Visiting Fellow*, KU Leuven & *Visitor*, U. L. Bruxellles (Applied Mathematics);
2011	*Visiting Fellow*, University College London (Department of Statistical Science);
2010	*Visiting Fellow*, KU Leuven & *Visitor*, V. U. Brussel (Mathematics);
2009	*Visiting Professor*, Institut de Physique du Globe de Paris;
2008	*Visiting Professor*, Eidgenössische Technische Hochschule Zürich.
2004–2007	*Lecturer of Geophysics*, University College London (UCL).
2002–2004	*Beck Postdoctoral Teaching Fellow*, Council on Science & Technology; *Hess Postdoctoral Fellow*, Geosciences Department, Princeton University.
2002	*Postdoctoral Research Associate*;
1996–2002	*Research & Teaching Assistant*, Earth, Atmospheric & Planetary Sciences, Massachusetts Institute of Technology (MIT).

DEGREES

1996–2002	Massachusetts Institute of Technology, Cambridge, MA; *Doctor of Philosophy* with thesis in Geophysics.
1992–1996	KU Leuven, Belgium; *Kandidaat & Licentiaat* with thesis in Geology; *Grootste onderscheiding (summa cum laude).*
1980–1992	Onze-Lieve-Vrouwecollege Jesuit School, Antwerpen, Belgium; *Humaniora*, Latin & Greek. *Primus perpetuus*.

RESEARCH

I am a geologically inspired, geophysically educated, computationally motivated and mathematically minded *geoscientist* interested in the seismic, mechanical, thermal and magnetic properties of the Earth's lithosphere — and of the terrestrial planets and moons. I enjoy analyzing complex, large, and heterogeneous geophysical data sets, and design theoretical and computational inverse methods and statistical techniques to be able to do so — especially for partially observed processes modeled on a sphere. No amount of sophistication can cure a fundamental data limitation: I am developing floating hydrophones to open up the sparsely instrumented oceanic domains for global tomography.

AWARDS

2014–2017	Fellow of the Faculty of Sciences, KU Leuven;
2012	National Science Foundation CAREER Award;
2008	Prix quadriennal *Charles Lagrange*, Académie Royale de Belgique;
2005	*Nuffield* Foundation Newly Appointed Lecturer Award;
2004	Editors' Citation for Excellence in Refereeing, JGR-Planets, AGU;
2002	*Beck* Fellowship, Council on Science & Technology, Princeton;
2001	Outstanding Student Paper Award, Seismology Section, AGU;
1998	*Victor J. DeCorte* Fellowship, MIT;
1997, 1998	Teaching Assistant Excellence Awards, EAPS, MIT;
1997	Biennial prize for an M. Sc. thesis in Geology, KU Leuven;
1996–2001	*Fulbright* Fellowship, Commission for Educational Exchange;
1996–1997	Honorary Fellowship, Belgian-American Educational Foundation;
1996–1997	Ambassadorial Scholarship, Rotary International Foundation;
1994	Scholarship, Scottish Universities' International Summer School,
1993	Competitive Scholarship, KU Brussel,
	for summer semesters on (post-)modernist English literature, U. Edinburgh.

TEACHING

2015–2017	*State of the Earth: Shifts and Cycles*, with A. Maloof, Princeton FRS 135;
2007–2015	*Data, Models & Uncertainty in the Natural Sciences*, Princeton GEO422;
2008–2015	*Global* (also: *Introductory*) *Geophysics*, Princeton GEO320/371/700/PHY371;
2008–2015	*Fundamentals of the Geosciences II*, Princeton GEO506, with others;
2011–2013	*Earth's Environments, Ancient Civilizations*, with A. Maloof, Princeton FRS;
2012	*Origin and Evolution of the Lithosphere*, with B. Schoene, Princeton GEO556;
2007–2009	*Earth's Changing Surface & Climate*, with A. Maloof, Princeton FRS;
2005–2006	*Global Seismology*, UCL GEOL3031;
2005–2006	*Earth & Planetary System Science*, with Lidunka Vočadlo, UCL GEOL4003;
2006	*The Deep Earth*, with David P. Dobson, UCL GEOL4005;
2005	*Global Tectonics*, with Gerald P. Roberts, Birkbeck College;
2003–2006	*Field Instructor*, *Active Tectonics*, with Robert A. Phinney, Princeton FRS;
2004	*Lab Instructor*, *Earthquakes, Volcanoes & Hazards*, Princeton GEO 210;
2002	*Guest Lecturer*, *Introductory Seismology*, Princeton GEO 424;
2002	*Guest Lecturer*, *Elements of Seismology*, MIT 12.501/12.201;
2001	*Tutor*, *Advanced Placement Physics*, Cambridge Rindge & Latin School;
2000	*Instructor*, Boston Math Circle;
1996–2000	*Teaching Assistant*, *Essentials of Geophysics*, MIT 12.501/12.201.

FUNDING

NSF, *Reproducible research & educational software for geoscience...* [EAR-1550732], 2016–2019.
NOAA, *Terrestrial ice mass loss and the sea-level budget* [NA08OAR4320752], 2015–2016.
NASA, *Structure & evolution of the Martian crustal magnetic field* [NNX14AM29G], 2014–2017.
NSF, *Phased testing at sea of the Son-O-Mermaid prototype* [EAR-1318416], 2013–2015.
NOAA, *Mapping Antarctica's mass loss in space and time* [NA08OAR4320752], 2013–2014.
NSF, *Mapping the evolution of Antarctica's mass balance* [PLR/EAR-1245788], 2012–2014.
NSF, *New perspectives on the continental lithosphere* [EAR-1150145], 2012–2017.
NASA, *Structure and evolution of the Venusian lithosphere* [NNX11AQ45G], 2011–2014.
NSF, *Making the most of* GRACE [EAR-1014606], 2009–2012.
NSF, *Mechanical anisotropy from gravity/topography coherence* [EAR-0710860], 2007–2011.

ESF, *Conference grant* [MYRES-II], 2006.
HEFCE, *Equipment grant for observational seismology* [SRIF3], 2005.
NERC, *Development of* MERMAID [NE/D521449/1], 2005–2008.
Nuffield Foundation, *Development of autonomous mid-column hydrophones* [NAL/01087/G], 2005.

TOTAL USA, *Full-waveform inversion of passive seismic data*, 2015–2017,
The MathWorks, *SLEPIAN: Code & course development for research and education*, 2015.

Princeton Environmental Institute, *Mapping Earth's ice mass balance in space and time* [PEI], 2015.
Princeton A. H. Phillips Fund, *Development of the Son-O-Mermaid instrument*, 2012.

Princeton 250th Fund, *State of the Earth: Shifts and Cycles* [FRS 135], 2015–2017.
Princeton 250th Fund, *Earth's Environments, Ancient Civilizations* [FRS 171/187], 2011–2013.
Princeton 250th Fund, *Earth's Changing Surface & Climate* [FRS 145/149], 2008–2010.

SEMINARS

I have given invited *seminars on 160 occasions since my first appearance in 1999. A complete listing is available at* `http://geoweb.princeton.edu/people/simons/vita2.html#invited`.

Invited Lectures in Academic Geosciences Departments (asterisks indicate named *lectures):*

2016 [5] U. Science Technol. China, Zhejian U. (2×), Wuhan U. (2×)

2015 [3] Inst. Physique du Globe de Paris, Peking University, Georgia Inst. of Technology

2014 [3] Purdue U., KIGAM South Korea, U. C. San Diego Scripps Inst. Oceanography

2013 [2] U. Cambridge, U. Chicago

2012 [7] U. Toronto, Virginia Tech, U. Oxford, ETH Zürich, MIT, Woods Hole Oceanographic Inst., Rutgers U.

2011 [5] Princeton U., Dublin Inst. Adv. Study, U. Cambridge, MIT, Harvard U.

2010 [5] Woods Hole Oceanographic Inst., KU Leuven, U. Siegen, U. C. Los Angeles, U. Southern Calif.

2009 [7] Cornell U. (2×), U. Michigan* [*William T. Smith Lecture*], U. Michigan, Columbia U. Lamont-Doherty Earth Observatory, U. C. Santa Cruz, SUNY Stony Brook

2008 [3] U. College London, U. Edinburgh, ETH Zürich

2007 [1] U. Illinois Urbana-Champaign* [*Richard L. Hay Lecture*]

2006 [5] U. College London, Carnegie Inst. Washington, Imperial College London, U. Cambridge, U. Oxford

2005 [8] U. C. San Diego Scripps Inst. Oceanography, U. Leicester, Harvard U., Princeton U., Stanford U. (2×), U. Southampton Oceanography Centre, U. College London

2004 [3] U. Leeds, U. C. Berkeley, U. Chicago

2003 [6] Washington U. St. Louis, Princeton U. (2×), Harvard U., U. College London, Penn State U.

2002 [5] U. C. Berkeley, Calif. Inst. Technology, U. C. San Diego Scripps Inst. Oceanography, Carnegie Inst. Washington, Princeton U.

2001 [3] U. Québec Montréal, Shell Rijswijk, Shell Houston

2000 [6] KU Leuven, U. Leeds, U. Oxford, Royal Holloway U. London, Brown U.

1999 [2] U. Québec Montréal, Inst. Physique du Globe de Paris

Invited Lectures in Various Other Departments, and Outreach Activities:

2016 [4] Princeton Speaks MATLAB [*Research Computing*], Earth Educators' Rendezvous [*Education*], U-NOW Day Nursery [*Geology Rocks!*], Littlebrook Elementary [*Science Expo*]

2015 [7] New York U. Courant Institute [*Mathematics*], ExxonMobil @ Princeton University [*E-ffiliates Meeting*], Carleton College SERC [*Education*], KU Leuven [*Astronomy*], U-NOW Day Nursery [*Geology Rocks!*], Littlebrook Elementary [*Science Expo*], Austrian Academy of Sciences [*Acoustics Research Institute*], Harbin Institute of Technology [*Mathematics*]

2014 [6] British Geological Survey (Edinburgh), Littlebrook Elementary [*4th Grade*], ExxonMobil Corporate Strategic Research (Clinton), Princeton U. [*McGraw Center*], Purdue U. [*Applied Mathematics*], Stanford U. [*Applied Mathematics*]

2013 [2] Concordia Science & Astronomy Club [*Plainsboro*], Princeton U. [*Colonial Club*]

2012 [1] Princeton U. [*Environmental Affairs Forum*]

2011 [1] Princeton U. [*Program in Applied & Computational Mathematics*]

2010 [1] NASA Goddard Space Flight Center [*Planetary Geodynamics*]

2009 [2] The College of New Jersey [*Physics*], Ohio State U. [*Geodesy*]

2006 [3] Imperial College London [*Mathematics*], U. Stuttgart [*Geodesy*], Birkbeck College London [*Astrobiology*]

2005 [1] Birkbeck College London [*Astrobiology*]

2004 [5] Cold Spring Harbor Laboratory, New York U. Courant Institute [*Harmonic Analysis & Signal Processing*], U. Kaiserslautern [*Oberseminar Geomathematik*] (3×)

2003 [1] Princeton U. [*Program Integrative Information, Comput. & Application Sciences*]

2002 [1] Princeton U. Time-Frequency Seminar [*Applied & Computational Mathematics*]

Invited Conference Presentations (asterisks indicate keynote *speeches)*:

2015 [4] American Geophysical Union [*Fall Meeting*], *TOPO-EUROPE**, Antibes, *Fête Nolet, GéoAzur*, Sophia Antipolis, *Int. Workshop on Mathematical Geophysics* Harbin, SIAM/AMS/MAA [*Joint Mathematics Meetings*] San Antonio (2×, talks given by A. Plattner and Y. Yuan)

2014 [3] Rhein-Main Arbeitskreis [*Mathematics of Computation**] U. Siegen, Royal Society Seminar [*Science on the Sphere*] Newport Pagnell, IRIS/GSH Workshop [*Active Uses of Passive Seismic Data*] Houston, SIAM/AMS/MAA [*Joint Mathematics Meetings*] Baltimore (2×, talks given by C. Harig and A. Plattner)

2013 [6] OBSIP [*2013 OBS Workshop*] Redondo Beach, SPIE [*Wavelets and Sparsity XV*] San Diego, AMMCS-2013 [*Applied Mathematics, Modeling and Computational Science*] Waterloo (talk given by A. Plattner), IAHS-IAPSO-IASPEI [*Joint Assembly*] Gothenburg, SIAM [*Annual Meeting*] San Diego, *GeoMathematics** *2013* St. Martin, SIAM/AMS/MAA [*Joint Mathematics Meetings*] San Diego

2012 [4] American Association of Physics Teachers (New Jersey) [*Annual Meeting**],
SSP-2012 [*IEEE Statistical Signal Processing Workshop*],
Bayerische Akad. Wissenschaften, [*IAG-ICCT Workshop*],
NASA Goddard Space Flight Center [*Program for Regional Climate Assessment*]

2011 [6] Northwestern U. [*Mathematics in the Geosciences*], SPIE [*Wavelets and Sparsity XIV*] San Diego, IUGG [*General Assembly*] Melbourne (2×), Princeton Center for Theoretical Science [*Seismology of the Earth and Stars*], SIAM/AMS/MAA [*Joint Mathematics Meetings*] New Orleans

2010 [2] Princeton Center for Theoretical Science Workshop, SIAM/AMS/MAA [*Joint Mathematics Meetings*] San Francisco

2009 [2] SPIE [*Wavelets XIII*] San Diego, VII Hotine-Marussi Symposium Rome

2008 [2] U. Kaiserslautern [*Geomathematics Workshop*], Seismological Society of America [*Annual Meeting*] Santa Fe

2007 [6] SPIE [*Wavelets XII*] San Diego, Int. Workshop on Modeling of Mantle Convection & Lithospheric Dynamics* Carry-le-Rouet, Int. Congress on Industrial & Applied Mathematics Zürich, U. British Columbia [*Applied Inverse Problems*], U. Iceland [*Undur Veraldar** Public Lecture], American Geophysical Union [*Fall Meeting*]

2005 [2] U. Kaiserslautern [*Inverse Problems Workshop*], European Geosciences Union General Assembly

2004 [5] Colorado School of Mines [*Mathematical Geophysics & Uncertainty Summer School*] (2×), MYRES-I Workshop* San Diego, Rensselaer Polytechnic Inst. [*Center for Inverse Problems Opening Conference*], GEOTOP-UQÀM-McGill [*Congrès des Etudiants**]

2002 [2] IEEE [*Computer Aided Seismic Analysis & Discrimination Workshop*],
MIT [*New England Workshop on Anisotropy & Imaging*]

2001 [1] American Geophysical Union [*Spring Meeting*]

2000 [1] American Geophysical Union [*Fall Meeting*]

A chronological list of contributed oral *presentations given at various scientific meetings is available at* `http://geoweb.princeton.edu/people/simons/vita2.html#orals`. *Similarly,* `http://geoweb.princeton.edu/people/simons/vita2.html#posters` *contains a list of* contributed poster *presentations.*

ADVISING

Current Postdocs:

Umair bin Waheed (Ph. D. 2015, KAUST), supported by TOTAL, co-advised with Jeroen Tromp;
Yanhua O. Yuan (Ph. D. 2016, Princeton), co-advised with Jeroen Tromp.

Current Graduate Students:

Joel D. Simon (Ph. D. Geophysics, *2019), supported by NSF.

Former Postdocs:

Christopher T. Harig (Ph. D. 2010, U. Colorado Boulder), now at U. Arizona;
Edwin S. Kite (Ph. D. 2011, U. C. Berkeley), *Hess Postdoctoral Fellow*, now at U. Chicago;
Alain Plattner (Ph. D. 2011, ETH Zürich), *Swiss National Fonds* Fellow, now at Fresno State U.;
Kevin W. Lewis (Ph. D. 2009, Caltech), *Hess Postdoctoral Fellow*, now at Johns Hopkins;
M. Glenn Sterenborg (Ph. D. 2011, Harvard U.), *Canadian Institute for Advanced Research* Fellow.

Former Graduate Students:

Yanhua O. Yuan (Ph. D. Geophysics, *2016), now at Princeton U.;
Ariane Ducellier, transferred to U. Washington, co-advised with Jeroen Tromp;
Yue Tian (Ph. D. Geophysics, *2010), now at Chevron, co-advised with Guust Nolet;
Dong V. Wang (M. A. Geophysics, *2010), now at U. North Carolina Chapel Hill.

Former Research Specialists:

Gabe L. Eggers (A. B. Geosciences, '2013), now at Georgia Institute of Technology.

Visiting Postdocs:

Lara M. Kalnins (Ph. D. 2011, U. Oxford), supported by NERC.

Visiting Graduate Students:

Wenyong Pan (Ph. D. 2018, U. Calgary), supported by U. Calgary;
Alice Bates (Ph. D. 2018, Australian National University), supported by ANU;
Verena Lieb (Ph. D. 2016, Deutsches Geodätisches Forschungsinstitut), supported by DAAD;
Chunli Dai (Ph. D. 2015, Ohio State U.), supported by NSF;
Lei Wang (Ph. D. 2012, Ohio State U.), supported by NSF;
Liying Wei (Ph. D. 2010, Australian National U.), supported by NSF.

Summer Research Interns:

Anna Van Brummen (Geosciences, '2017); Gloria Yin (Mathematics, '2018); David Li, Princeton High School (NJ); Gabe Eggers (Geosciences, '2013); Evan Welch (Physics, '2012); Laura Larsen-Strecker (B. A. 2009, Harvard U.).

High School Mentees:

David Li, Princeton High School (NJ): *Analysis of seafloor bathymetry using* MATLAB;
Dmitriy Potylitsin, Holmdel High School (NJ): *Dendroclimatological analysis of Pine species in California*, presented at the NJ Academy of Science Junior and Senior Academies Meeting.

Non-Princeton Former Students:

Jonathan Watson (M. Res., 2006), Birkbeck College;
Anthony Bloom, Ben Dando & Gary Hayes (M. Sci., 2006), UCL;
Caroline Attwood, Rachael Bayliss, Richard Ford & Neesha Jeshani (B. Sc., 2006), UCL.

Senior Theses Advised: [7]

Anna Van Brummen (Geosciences, '2017).

Kelley Swadba (Geosciences, '2017).

Alyson Beveridge (Geosciences, '2016): *Measuring the changing mass of glaciers on the Tibetan Plateau using time-variable gravity from the GRACE mission*.

Weber Liu (Geosciences, '2016): *Analysis of Martian topography via a parameterized spectral approach*.

Kathleen Ryan (Geosciences, '2014): *Precision and accuracy of low-cost Global Positioning augmentation systems.*

Gabe Eggers (Geosciences, '2013): *A regionalized maximum-likelihood estimation of the spatial structure of Venusian topography.*

Evan Welch (Physics, '2012): *Inversion of first order Eulerian gravitational potential perturbations for the seismic moment tensor: a normal modes approach.*

Junior Papers Advised: [8]

Mrinalini Basu (Physics, 2015): *Modelling mass change in California with* GRACE.

Gabe Eggers (Geosciences, '2013): *A coherent, regionalized map of Venus*.

Garnet Abrams (Geosciences, '2012): *Gravity anomalies or optical illusions? A fine-scale survey of two New Jersey "gravity hills"*.

Evan Welch (Physics, '2012): *Displacements from the 1-D Earth's free oscillations*.

Henry Chu (Operations Research, '2011): *On the inversion for lithospheric geomagnetic potential from scattered, noisy satellite data on bounded spherical domains*.

Yifeng Wang (Geosciences, '2011): *Analysis of acoustic wave speeds in the ocean with view of deploying hydrophones for global seismic tomography* and *Analysis of hydroacoustic time series from the High-Frequency Acoustic Recording Package array*.

Cristian Proistosescu (Physics, '2009): *Trace-element dendrochronology: Creating an age model for ringless trees from low latitudes*.

EXAMINER *I have served on 13 doctoral and 3 master's examination committees at other institutions or in departments outside of my primary affiliation. A listing of the doctoral committees on which I served within the Department of Geosciences, as of my "normal" duties, is found on page 14.*

2015 Christian Blick (Ph. D., Mathematics), U. Kaiserslautern,
Multiscale potential methods in geothermal research: Decorrelation reflected post-processing and locally based inversion.
Adviser: Willi Freeden.

Paul Käufl (Ph. D., Geophysics), U. Utrecht,
Rapid probabilistic source inversion using pattern recognition.
Adviser: Jeannot Trampert.

Ramakrushna Reddy T. (Ph. D., Geophysics), Indian Institute of Technology Madras, Chennai,
Seismic early warning using improved multiscale wavelet approach.
Adviser: Rajesh R. Nair.

2014 Anthony Chatu (M. Sc., Geophysics), U. Witwatersrand,
Processing and interpretation of potential field data from Namibia.
Adviser: Gordon R. J. Cooper.

2013 Zubair Khalid (Ph. D., Electrical Engineering), Australian National U.,
Spatio-spectral analysis on the unit sphere.
Adviser: Rodney A. Kennedy.

D. Cornelis Slobbe (Ph. D., Geoscience & Remote Sensing), T. U. Delft,
Roadmap to a mutually consistent set of offshore vertical reference frames.
Adviser: Roland Klees.

2012 Sergey Voronin (Ph. D., Applied and Computational Mathematics), Princeton,
Regularization of linear systems with sparsity constraints with applications to large scale inverse problems.
Adviser: Ingrid C. Daubechies.

Lei Wang (Ph. D., Geodetic Science), Ohio State U.,
Coseismic deformation detection and quantification for great earthquakes using spaceborne gravimetry.
Adviser: C. K. Shum.

2011 Eugene Brevdo (Ph. D., Electrical Engineering), Princeton,
Efficient representations of signals in nonlinear signal processing with applications to inverse problems.
Advisers: Peter J. Ramadge and Ingrid C. Daubechies.

Mélanie Villemaire (*Maîtrise*, Sciences de la Terre), U. Québec à Montréal,
Structure tridimensionnelle du manteau supérieur sous l'est du bouclier canadien et le nord des Appalaches en utilisant la tomographie des ondes P.
Adviser: Fiona A. Darbyshire.

Doreen Fischer (Ph. D., Mathematics), U. Siegen,
Sparse regularization of a joint inversion of gravitational data and normal mode anomalies.
Adviser: Volker Michel.

Reyko Schachtschneider (Ph. D., Physics), U. Potsdam,
Error distribution in regional inversions of potential fields from satellite data.
Adviser: Matthias Holschneider.

2010 Liying Wei (Ph. D., Electrical Engineering), Australian National U.,
Signal concentration and related concepts in time-frequency and on the unit sphere.
Adviser: Rodney Kennedy.

2007 Abel Amirbekyan (Ph. D., Mathematics), U. Kaiserslautern,
The application of reproducing kernel based spline approximation to seismic surface and body wave tomography: Theoretical aspects and numerical results.
Adviser: Volker Michel.

2006 Peggy Vermeesch (Ph. D., Geophysics), Imperial College,
Geophysical modelling of the Chicxulub crater.
Advisers: Joanna V. Morgan and Michael Warner.

2004 Pascal Audet (*Maîtrise*, Sciences de la Terre), U. Québec à Montréal,
Réponse flexurale de la lithosphère dans le bouclier canadien.
Adviser: Jean-Claude Mareschal.

CONVENER *I have served as co-organizer of the following 19 meetings and special sessions:*

2016 *Teaching Geoscience with MATLAB*, Special Session,
Fall AGU; with Andrew M. Fisher (U. Tasmania) & Risa D. Madoff (U. North Dakota).

Princeton Speaks MATLAB, Users Group Kick-Off Event,
Princeton Institute for Computational Science and Engineering (PICSciE) and the Office of Information Technology (OIT) Research Computing; with Charles Augustine (Princeton).

Teaching Computation in the Sciences Using MATLAB, International Workshop,
Carleton College, Northfield, MN; with Lisa Kempler (MathWorks), Cathryn A. Manduca (Carleton), Kristin Jenkins (BioQUEST), Kelly Roos (Bradley U.) & Wendy Thomas (U. Washington).

2015 *Forward and Inverse Problems in Geodesy, Geodynamics, and Geomagnetism*, Minisymposium,
SIAM Conference on Mathematical & Computational Issues in the Geosciences; with Alain Plattner (Fresno).

2014 *From NARS to Mariscope: Three Decades of Seismological Networks*, Special Session,
Fall AGU; with Suzan van der Lee (Northwestern), Jeroen Ritsema (U. Michigan) & Karin Sigloch (Oxford).

Impact of Waves Along Coastlines, Institute for Mathematics and its Applications (IMA),
Hot Topic Workshop, Minneapolis, MN; with Jed Brown (Argonne), Donna Calhoun (Boise State), Natasha Flyer (NCAR), David George (USGS), Kyle Mandli (Columbia U.), Rosemary Renaut (Arizona State), Grady Wright (Boise State) & Dave Yuen (U. Minnesota).

Roadmap Workshop, Consortium for Mathematics in the Geosciences (CMG++),
Boise State University; with Jodi Mead & Grady Wright (Boise State), Natasha Flyer (NCAR), Rosemary Renaut (Arizona State), Seth Stein (Northwestern) & Dave Yuen (U. Minnesota).

Real-Time Seismic Data from the Oceans, Special Interest Group (SIG) meeting,
IRIS Workshop, Sunriver, OR; with Gabi Laske (Scripps) & Guust Nolet (U. Nice).

2013 *Geological Data Fusion: Tackling the Statistical Challenges of Interpreting Past Environmental Change*,
DIMACS Workshop, Rutgers University; with Bob Kopp (Rutgers U.).

2012 *Bridging the Gap between the Geosciences and Mathematics, Statistics, and Computer Science*,
NSF and Princeton Center for Theoretical Science; with Don Estep (Colorado State), Natasha Flyer (NCAR), Michael Ghil (UCLA), Ridg Scott (U. Chicago), Michael Stein (UCLA), Seth Stein (Northwestern), Grady Wright (Boise State) & Dave Yuen (U. Minnesota).

2010 *Advances in Signal Processing Methods for Seismology*, Special Session,
Fall AGU; with Youshun Sun (MIT) & Po Chen (U. Wyoming).

2008 *Models of the Deep Earth*, Special Session,
Fall AGU; with S.-H. Dan Shim (MIT) & Michael Thorne (U. Utah).

2007 *Rheological Anisotropy: Geological and Geophysical Perspectives*, Special Session,
Fall AGU; with Einat Lev (MIT), Pascal Audet (UBC) & Throstur Thorsteinsson (U. Iceland).

2006 MYRES-II: *Dynamics of the Lithosphere*,
Verbania, Italy; with Laurent Montési (WHOI) & Giulio di Toro (U. Padova).

2005 *Analysis and Representation of Geophysical Data on the Sphere*, Special Session,
Fall AGU; with Mark Wieczorek (IPG Paris), Andy Jackson (U. Leeds) & Dave Yuen (U. Minnesota).

Wavelet and Time-Frequency Analysis in the Earth Sciences, Special Session,
Spring EGU; with Jonathan Lilly (IPG Paris) & Sofia Olhede (Imperial College).

2004 MYRES-I: *Heat, Helium, Hotspots, and Whole Mantle Convection*,
La Jolla, CA; with Thorsten Becker (USC) & Jamie Kellogg (UCLA).

Crust-Mantle Interaction and Lithospheric Deformation, Special Session,
Fall AGU; with Corné Kreemer (U. Nevada) & Oliver Heidbach (U. Karlsruhe).

2002 *Structure, Composition & Evolution of Deep Continental Lithosphere*, Special Session, Fall AGU; with Cin-Ty Lee (Rice U.).

SERVICE

Editorial

Advisory Board Member, *Springer Geosystems Mathematics* Books, since 2014;
Editor, *International Journal on Geomathematics*, since 2010;
Editorial Advisory Board, *Journal of Geodetic Science*, since 2010;
Editorial Advisory Board, *Earth & Planetary Science Letters*, since 2007;
Associate Editor, *Journal of Geophysical Research (Solid Earth)*, 2004–2009.

Refereeing

Manuscripts [260+] for journals, publishers, and funding agencies: *Adv. Space Res.*, *AGU Monographs*, *Appl. Comput. Harmon. Anal.*, *Arab. J. Geosci.*, *Artificial Satellites*, *Cambridge U. Press*, *Czech Sci. Found.*, *Climatic Change*, *Comput. Geosci.*, *Earth Planets Space*, *Earth Sci. Res. J.*, *Earth & Planet. Sc. Lett.*, *Eos Trans. AGU*, *European Research Council*, *European Science Foundation*, *Fédération Wallonie-Bruxelles*, *Free U. Brussels GOA*, *G-Cubed*, *Geology*, *Geoph. J. Int.*, *Geoph. Res. Lett.*, *Geosphere*, *GSA Spec. Pub.*, *Harvard U. Press*, *Icarus*, *IEEE Stat. Sig. Proc. Workshop*, *IEEE Trans. Sig. Proc.*, *IEEE Trans. Geosc. Remote Sens.*, *Inst. National Sciences de l'Univers*, *Int. J. Geomath.*, *Inv. Probl. Sci. Eng. Israel Sci. Found.*, *J. Appl. Geophys.*, *J. Coastal Conserv.*, *J. Fourier Anal. Appl.*, *J. Geodyn.*, *J. Geodesy*, *J. Geodet. Sci.*, *J. Geophys. Eng.*, *J. Geoph. Res.*, *J. Roy. Stat. Soc.*, *Kentucky Sci. & Eng. Found.*, *King Abdullah U. Sci. Tech.*, *Lithosphere*, *Louisiana Board of Regents*, *National Aeronautics and Space Administration* (including for the NASA Postdoctoral Program), *National Science Foundation* (including as panelist on 1 panel), *Natural Sci. & Eng. Res. Council Canada*, *Neth. Org. Sci. Res.*, *Neth. Space Office*, *Ocean Modelling*, *Phys. Earth. Planet. Int.*, *Proc. Roy. Soc. Lond. Ser. A*, *Princeton U. Press*, *Science*, *Seismol. Res. Lett.*, *Smithsonian Channel USA*, *Symm. Integr. Geom. Meth. Appl.*, *Studia Geophys. Geodaet.*, *Swiss National Science Fonds*, *Taylor & Francis*, *Tectonophysics*, *U. K. Natural Environment Res. Council*, *U. K. Particle Phys. Astron. Res. Council*. *U. S. Dept. of Energy*.

Community

Member, *EarthScope* Education and Outreach SubCommittee, since 2014;
Co-organizer, *AGU* Meeting of the Americas, *Tectonophysics*, 2009–2010;
Representative, *Incorporated Research Institutions for Seismology*, 2006–2013;
Alternate, *COnsortium for Materials Properties Research in Earth Sciences*.
Member, *IAG* Inter-Comission Committee on Theory Joint Study Groups
Multiresolutional aspects of potential field theory (2015–2019) and
Comparison of current methodologies in regional gravity field modeling (2012–).

Princeton

Doctoral Exam Committees (superscripts indicate my "outsider" *status):* [15]
Pathikrit Bhattacharya (Seismology, *2016), Susannah Dorfman (Mineral Physics°, *2011), Blake Dyer (Geology°, *2016), Brian Gertsch (Paleontology°, *2010), Jessica Hawthorne (Seismology, *2012), Jon Husson (Geology°, *2014), Brenhin Keller (Geochemistry°, *2016), Yang Luo (Seismology, *2012), Yves Plancherel (Oceanography°, *2011), Yue Tian (Seismology, *2010), Tarje Nissen-Meyer (Seismology, *2008), Makoto Suwa (Geochemistry°, *2007), Garrett Tate (Geology°, *2014), Enning Wang (Seismology, *2013), Hejun Zhu (Seismology, *2013).

General Exam Committees: [28]
Andrew Babbin (Biogeochemistry, *2014), Pathikrit Bhattacharya (Seismology, *2016), Susannah Dorfman (Mineral Physics, *2011), Rajkrishna Dutta (Mineral Physics, *2018), Blake Dyer (Geology, *2016), Jessica Hawthorne (Seismology, *2012), Jon Husson (Geology, *2014), Sarah Johnston (Geology, *2008), Jennifer Kasbohm (Geology, *2019), Kelly Kearney (Oceanography, *2010), Brenhin Keller (Geochemistry, *2016), Leah Langer (Seismology, *2019), Wenjie Lei (Seismology, *2018), Yang Luo (Seismology, *2012), Scott MacLennan (Geochemistry, *2019), Ryan Modrak (Seismology, *2016), Yajun Peng (Seismology, *2018), Yves Plancherel (Oceanography, *2010), Joel Simon (Seismology, *2019), James Smith (Seismology, *2018), Garrett Tate (Geology, *2014), Shannon Tronick (Biogeochemistry, *2010), Philip Vetter (Applied Mathematics, *2010), Enning Wang (Seismology, *2013), Jue Wang (Mineral Physics, *2014), Yanhua Yuan (Seismology, *2017), Lisha Xie (Mineral Physics, *2009), Hejun Zhu (Seismology, *2013).

Other Committees:
Conference Undergraduate Women In Physics Planning Committee (2015–2017);
Princeton University Faculty *Committee on Committees* (2014–);
Geosciences Development Committee (2013–);
Geosciences Diversity Committee (2013–);
Geosciences Departmental Lecture Series Co-Organizer (2013–);
Andlinger Center / Princeton Environmental Institute, Proposal Panelist (2014);
Harry Hess Fellows Program Search Committee (2013);
The Evolving Geosciences at Princeton, GeoGrad Reunion Panelist (2012);
Graduate Work & Admissions Committee, Geosciences (2007–2012);
New Faculty Orientation Panelist, McGraw Center (2009);
Senior & Junior Faculty Search Committees, Geophysics (2007–2008);
Geosciences Website Committee (2007–2008);
Geosciences Colloquium Organizer (Spring 2007).

College Fellowships:
Wilson College, Fall 2011, 2012, 2013 & 2015.

CLASSES

In the following pages I provide short descriptions of the classes that I have developed and/or taught since joining the Princeton faculty. A complete list was found on page 2 of this document. A general selection of student comments, from the Student Course Guide *website, can be found at* `http://geoweb.princeton.edu/people/simons/fjsimons-feedback.html`

DATA, MODELS, & UNCERTAINTY IN THE NATURAL SCIENCES — GEO422

Offered in 2007 [8 enrolled], 2008 [6], 2010 [14], 2012 [25], 2015 [30]
`http://geoweb.princeton.edu/people/simons/GEO422-feedback.html`

No more being puzzled by dots on a graph! This course is for those who want to turn observations into models and subsequently evaluate their uniqueness and uncertainty. Three main topics are elementary statistics, heuristic time series analysis, and model parameter estimation via matrix inverse methods. While the instructor's and textbook examples will be derived mostly from the physical sciences, students are encouraged to bring their own data sets for classroom discussion and in-depth analysis as part of their term papers. Problem sets and MATLAB computer programming exercises form integral parts of the course.

GLOBAL GEOPHYSICS — GEO371/PHY371
INTRODUCTORY GEOPHYSICS — GEO320/GEO700

Offered in 2008 [6 enrolled], 2009 [8], 2013 [7], 2015 [2], 2017
`http://geoweb.princeton.edu/people/simons/GEO371-feedback.html`

An introduction to the fundamental principles of global geophysics. Four parts, taught over three weeks each in an order allowing the material to build up to form a final coherent picture of (how we know) the structure and evolution of the solid Earth: *Gravity* and *Magnetism*: the description and study of the Earth's magnetic and gravitational fields. *Seismology*: body waves, surface waves and free oscillations. *Geodynamics*: heat flow, cooling of the Earth, and mantle convection. The emphasis is on physical principles including the mathematical derivation and solution of the governing equations.

ORIGIN AND EVOLUTION OF THE CONTINENTAL LITHOSPHERE — GEO556

Offered in 2012 [4 enrolled]
`http://geoweb.princeton.edu/people/simons/GEO556-feedback.html`

Despite its volumetric insignificance on Earth, the continental lithosphere is an immensely important geochemical reservoir, hosts the terrestrial biosphere, and impacts plate tectonics and therefore mantle convection. This course surveys how and why continental lithosphere is formed, preserved, and destroyed throughout Earth history. We will tap into datasets collected using structural geology, geochemistry and petrology, radiogenic and stable isotopes, seismology, gravity, and heat flow, all of which are used to inform numerical and theoretical models.

Co-taught with Prof. Blair Schoene.

FUNDAMENTALS OF THE GEOSCIENCES II — GEO506

Offered in 2008 [9 enrolled], 2012 [4], 2013 [9], 2014 [9], 2015 [4+7]

A survey of fundamental topics in the geosciences. Each lecturer teaches for two weeks.

Co-taught with other Geosciences Faculty.

STATE OF THE EARTH'S: SHIFTS AND CYCLES (IN SPAIN) FRS135/128
Offered in 2015 [13 enrolled], 2017, 2018
http://geoweb.princeton.edu/people/simons/FRS-SESC.html
http://geoweb.princeton.edu/people/simons/FRS-SESC-feedback.html

In this Freshman Seminar, you will combine field observations of the natural world with quantitative modeling and interpretation to answer questions like: *How have Earth and human histories been recorded in the geology of Princeton, the Catskills, and Spain, and what experiments can you do to query such archives of the past?* In the classroom, through problem sets, and around campus, you will gain practical experience collecting geological and geophysical data in geographic context, and analyzing these data using statistical techniques such as regression and time series analysis, with the programming language MATLAB. During the required one-day trip to the Catskills and week-long term break trip to France and Spain, you will engage in research projects that focus on the cycles and shifts in Earth's shape, climate, and life that occur now on timescales of days, and have been recorded in rocks over timescales of millions of years. The classroom component of this Freshman Seminar will have graded (bi)weekly assignments built around on-campus data collection, data preparation or analysis, and scientific programming. A significant part of your assessment comes from writing assignments that teach you to communicate your scientific results, and culminate in an original research paper and an oral presentation for an audience of peers, Freshman Seminar alumni, and invited guests from the university community.

Co-taught with Prof. Adam Maloof.

EARTH'S ENVIRONMENTS & ANCIENT CIVILIZATIONS (IN CYPRUS) FRS171/187
Offered in 2011 [12 enrolled], 2012 [15], 2013 [13]
http://geoweb.princeton.edu/people/simons/FRS-EEAC.html
http://geoweb.princeton.edu/people/simons/FRS-EEAC-feedback.html

In this Freshman Seminar, you will combine field observations of the natural world with quantitative modeling and interpretation in order to answer questions like: *How does environmental change alter the course of civilization, and how do civilizations modify their environment? How have Earth and human histories been recorded in the geology and archaeology of Cyprus, and what experiments can we do to query such archives of the past?* In the classroom, through problem sets, and on campus excursions, you will gain practical experience collecting geological and geophysical data in geographic context, and analyzing these using software and programming languages like ArcGIS and MATLAB. During the required week-long trip to Cyprus, you will engage in research projects that focus on the interplay between active tectonic landscapes, changing climate, and ancient civilizations, and then turn what you learn into three progressively more elaborate research papers. The classroom component of the seminar will have graded assignments built around data collection, preparation, or analysis, software handling and the beginnings of scientific programming; but, also, expository and research writing which culminates in an original research paper, a poster and a public oral presentation. The field location for this course is appropriate not only for its geoscientific importance but also for the tie-in with the *Department of Art & Archaeology* which has been conducting archaeological excavations in the city of Polis Chrysochous for three decades. This is a *science* class: you should come prepared with an aptitude for, and a willingness to learn the quantitative aspects of scientific inquiry.

Co-taught with Prof. Adam Maloof.

EARTH'S CHANGING SURFACE & CLIMATE FRS145/149

Offered in 2007 [20 enrolled], 2008 [13], 2009 [15]

`http://geoweb.princeton.edu/people/simons/FRS-ECSC.html`

`http://geoweb.princeton.edu/people/simons/FRS-ECSC-feedback.html`

The surface of Earth today, an amalgamation of mountain ranges, basins, and the hydrosphere, records an integrated history of processes that act on a range of time scales spanning seventeen orders of magnitude. The central question treated in this Freshman Seminar is: *How does Earth's surface evolve in response to internal (e.g., tectonic and magmatic), surficial (e.g., weather, climate, and anthropogenic effects), and external (e.g., extraterrestrial) forcing?* This Freshman Seminar provides you with practical experience making geological and geophysical observations, and in particular, focuses on quantitative analysis of observables such as topography, gravity, and weather. The classroom seminar is complimented by a mandatory week-long field trip to the western United States. During this trip, you will develop research projects that involve geological and geophysical mapping of the interplay between recent volcanic explosion craters, changing climate, and anthropogenic demands on water resources in the Mono Lake region. This seminar is *not* a comprehensive introduction to the geological sciences, but rather a look at a select few processes of import to understand changes to the Earth's surface in space and time. While certain fundamental principles of geology are explained in class and through reading assignments, the emphasis is on how *you* can be a natural scientist with a background of nothing but high school math and physics, a keen observational sense, a knack for spatial and quantitative analysis, and a careful and precise way with words.

Co-taught with Prof. Adam Maloof.

PAPERS

The following is a chronological list of peer-reviewed papers published by major research journals (on papers that appeared since my joining Princeton, asterisks denote Princeton graduate students, circles denote Princeton postdocs, daggers visiting or collaborating graduate students or postdocs, and dollar signs undergraduates; superscripts P for tenured Princeton faculty and T for tenured faculty at other institutions). Links to the journal pages are provided; a direct link to the published papers in PDF form is `http://geoweb.princeton.edu/people/simons/reprints.html`. *The BibTEX* archive is at `http://geoweb.princeton.edu/people/simons/fjspubs.html`.

2016 Alain Plattner & **F. J. Simons**,
Internal and external potential-field estimation from regional gradient data at varying satellite altitude,
Geoph. J. Int., 29 pp, *submitted September 2016*

Willi Freeden, Volker Michel & **F. J. Simons**,
Spherical-harmonics based special function systems and constructive approximation methods,
Book Chapter, 67 pp, Springer Verlag, *submitted August 2016*

Yanhua O. Yuan*, **F. J. Simons** & Jeroen Tromp,
Double-difference adjoint seismic tomography,
Geoph. J. Int., 20 pp, `http://dx.doi.org/10.1093/gji/ggw233`

Christopher Harig° & **F. J. Simons**,
Ice mass loss in Greenland, the Gulf of Alaska and Canadian Archipelago: Seasonal cycles and decadal trends,
Geoph. Res. Lett., 10 pp, `http://dx.doi.org/10.1002/2016GL067759`

2015 Alain Plattner & **F. J. Simons**,
High-resolution local magnetic field models for the Martian South Pole from Mars Global Surveyor data,
J. Geoph. Res., 24 pp, http://dx.doi.org/10.10002/2015JE004869

Yanhua O. Yuan*, **F. J. Simons** & Ebru Bozdağ,
Multiscale adjoint waveform tomography for surface and body waves,
Geophysics, 22 pp, http://dx.doi.org/10.1190/GEO2014-0461.1

Alexey Sukhovich, Sébastien Bonnieux, Yann Hello, Jean-Olivier Irisson, **F. J. Simons** & Guust Nolet,
Seismic monitoring in the oceans using autonomous floats,
Nature Commun., 6 pp, http://dx.doi.org/10.1038/ncomms9027

Lara M. Kalnins, **F. J. Simons**, Jon F. Kirby, Dong V. Wang & Sofia C. Olhede,
On the robustness of estimates of mechanical anisotropy in the continental lithosphere: A North American case study and global reanalysis,
Earth & Planet. Sc. Lett., 9+46 pp, http://dx.doi.org/10.1016/j.epsl.2015.02.041

Christopher Harig° & **F. J. Simons**,
Accelerated West Antarctic ice mass loss continues to outpace East Antarctic gains,
Earth & Planet. Sc. Lett., 8+7 pp, http://dx.doi.org/10.1016/j.epsl.2015.01.029

Alain Plattner° & **F. J. Simons**,
Potential-field estimation using scalar and vector Slepian functions at satellite altitude,
Handbook of Geomathematics (2nd edition), edited by W. Freeden, M. Z. Nashed & T. Sonar,
Springer Verlag, 47 pp, http://dx.doi.org/10.1007/978-3-642-54551-1_64

F. J. Simons & Alain Plattner°,
Scalar and vector Slepian functions, spherical signal estimation and spectral analysis,
Handbook of Geomathematics (2nd edition), edited by W. Freeden, M. Z. Nashed & T. Sonar,
Springer Verlag, 46 pp, http://dx.doi.org/10.1007/978-3-642-54551-1_30

2014 Yanhua O. Yuan* & **F. J. Simons**,
Multiscale adjoint waveform-difference tomography using wavelets,
Geophysics, 17 pp, http://dx.doi.org/10.1190/GEO2013-0383.1

Alain Plattner° & **F. J. Simons**,
Spatiospectral concentration of vector fields on a sphere,
Appl. Comput. Harm. Anal., 23 pp, http://dx.doi.org/10.1016/j.acha.2012.12.001

2013 Alain Plattner$^{\circ}$ & **F. J. Simons**,
A spatiospectral localization approach for analyzing and representing vector-valued functions on spherical surfaces,
Proc. SPIE, Invited Paper, 15 pp, http://dx.doi.org/10.1117/12.2024703

Jean Charléty†, Sergey Voronin*, G. Nolet$^{\mathrm{T}}$, Ignace Loris$^{\mathrm{T}}$, **F. J. Simons**, Karin Sigloch & I. C. Daubechies$^{\mathrm{T}}$,
Global seismic tomography with sparsity constraints: Comparison with smoothing & damping regularization,
J. Geoph. Res., 13 pp, http://dx.doi.org/10.1002/jgrb.50326

F. J. Simons & Sofia C. Olhede$^{\mathrm{T}}$,
Maximum-likelihood estimation of lithospheric flexural rigidity, initial-loading fraction, and load correlation, under isotropy,
Geoph. J. Int., 43 pp, http://dx.doi.org/10.1093/gji/ggt056

R. E. Kopp, **F. J. Simons**, J. X. Mitrovica$^{\mathrm{T}}$, A. C. Maloof$^{\mathrm{P}}$& M. Oppenheimer$^{\mathrm{P}}$,
A probabilistic assessment of sea level variations within the last interglacial stage,
Geoph. J. Int., 6 pp, http://dx.doi.org/10.1093/gji/ggt029

Ciarán D. Beggan, Jarno Saarimäki†, Kathy Whaler$^{\mathrm{T}}$& **F. J. Simons**,
Spectral and spatial decomposition of lithospheric magnetic field models using spherical Slepian functions,
Geoph. J. Int., 13 pp, http://dx.doi.org/10.1093/gji/ggs122

2012 Christopher Harig$^{\circ}$ & **F. J. Simons**,
Mapping Greenland's mass loss in space and time,
Proc. Natl. Acad. Sc., 4+9 pp, http://dx.doi.org/10.1073/pnas.1206785109

Kevin W. Lewis$^{\circ}$ & **F. J. Simons**,
Local spectral variability and the origin of the Martian crustal magnetic field,
Geoph. Res. Lett., 6+4 pp, http://dx.doi.org/10.1029/2012GL052708

Lei Wang†, C. K. Shum$^{\mathrm{T}}$, **F. J. Simons**, Andrés Tassara, Kamil Erkan†, Christopher Jekeli$^{\mathrm{T}}$, Alexander Braun, Chungyen Kuo, Hyongki Lee & Dah-Ning Yuan,
Coseismic slip of the 2010 Mw 8.8 Great Maule, Chile, earthquake quantified by the inversion of GRACE observations,
Earth & Planet. Sc. Lett., 13+3 pp, http://dx.doi.org/10.1016/j.epsl.2012.04.044

Lei Wang†, C. K. Shum$^{\mathrm{T}}$, **F. J. Simons**, Byron D. Tapley$^{\mathrm{T}}$& Chunli Dai†,
Coseismic and postseismic deformation of the 2011 Tohoku-Oki earthquake constrained by GRACE gravimetry,
Geoph. Res. Lett., 6+13 pp, http://dx.doi.org/10.1029/2012GL051104

D. Cornelis Slobbe†, **F. J. Simons** & Roland Klees$^{\mathrm{T}}$,
The spherical Slepian basis as a means to obtain spectral consistency between mean sea level and the geoid,
J. Geodesy, 20 pp, http://dx.doi.org/10.1007/s00190-012-0543-x

2011 **F. J. Simons**, Ignace Loris, Eugene Brevdo* & Ingrid C. Daubechies[P],
Wavelets and wavelet-like transforms on the sphere and their application to geophysical data inversion,
Proc. SPIE, Invited Paper, 15 pp, http://dx.doi.org/10.1117/12.892285

F. J. Simons, Ignace Loris, Guust Nolet[P], Ingrid C. Daubechies[P], Sergey Voronin*, J. Stephen Judd, Philip A. Vetter*, Jean Charléty[†] & Cédric Vonesch°,
Solving or resolving global tomographic models with spherical wavelets, and the scale and sparsity of seismic heterogeneity,
Geoph. J. Int., 20 pp, http://dx.doi.org/10.1111/j.1365-246X.2011.05190.x

A. Sukhovich[†], J.-O. Irisson, **F. J. Simons**, A. Ogé, Y. M. Hello, A. Deschamps & G. Nolet[T],
Automatic discrimination of underwater acoustic signals generated by teleseismic *P*-waves: A probabilistic approach,
Geoph. Res. Lett., 5+3 pp, http://dx.doi.org/10.1029/2011GL048474

F. J. Simons & Dong V. Wang*,
Spatiospectral concentration in the Cartesian plane,
Int. J. Geomath., 36 pp, http://dx.doi.org/10.1007/s13137-011-0016-z

2010 **F. J. Simons**,
Slepian functions and their use in signal estimation and spectral analysis,
Handbook of Geomathematics, edited by W. Freeden, M. Z. Nashed & T. Sonar,
Springer Verlag, 34 pp, http://dx.doi.org/10.1007/978-3-642-01546-5_30

Adam C. Maloof, Catherine V. Rose*, Claire C. Calmet[†], Robert Beach, Brad M. Samuels, Douglas H. Erwin, Gerald R. Poirier, Nan Yao & **F. J. Simons**,
Possible animal-body fossils in pre-Marinoan limestones from South Australia,
Nature Geoscience, 7+5 pp, http://dx.doi.org/10.1038/ngeo934

Christopher Harig[†], Shijie Zhong[T]& **F. J. Simons**,
Constraints on upper-mantle viscosity from the flow-induced pressure gradient across the Australian continental keel,
Geochem., Geoph., Geosys., 21 pp, http://dx.doi.org/10.1029/2010GC003038

2009 R. E. Kopp°, **F. J. Simons**, J. X. Mitrovica[T], A. C. Maloof & M. Oppenheimer[P],
Probabilistic assessment of sea level during the last interglacial stage,
Nature, 6+33 pp, http://dx.doi.org/10.1038/nature08686

F. J. Simons, Jessica C. Hawthorne* & Ciarán D. Beggan[†],
Efficient analysis and representation of geophysical processes using localized spherical basis functions,
Proc. SPIE, Invited Paper, 15 pp, http://dx.doi.org/10.1117/12.825730

F. J. Simons, G. Nolet[P], P. Georgief, J. M. Babcock, L. A. Regier & R. E. Davis[P],
On the potential of recording earthquakes for global seismic tomography by low-cost autonomous instruments in the oceans,
J. Geoph. Res., 16 pp, http://dx.doi.org/10.1029/2008JB006088

2008 F. A. Dahlen[P] & **F. J. Simons**,
Spectral estimation on a sphere in geophysics and cosmology,
Geoph. J. Int., 34 pp, http://dx.doi.org/10.1111/j.1365-246X.2008.03854.x

Jeffrey J. McGuire, **F. J. Simons** & John A. Collins,
Analysis of seafloor seismograms of the 2003 Tokachi-Oki earthquake sequence for earthquake early warning,
Geoph. Res. Lett., 5 pp, http://dx.doi.org/10.1029/2008GL033986

Abel Amirbekyan[†], Volker Michel & **F. J. Simons**,
Parametrizing surface wave tomographic models with harmonic spherical splines,
Geoph. J. Int., 12 pp, http://dx.doi.org/10.1111/j.1365-246X.2008.03809.x

Shin-Chan Han & **F. J. Simons**,
Spatiospectral localization of global geopotential fields from the Gravity Recovery and Climate Experiment (GRACE) reveals the coseismic gravity change owing to the 2004 Sumatra-Andaman earthquake,
J. Geoph. Res., 14 pp, http://dx.doi.org/10.1029/2007JB004927

2007 Mark A. Wieczorek & **F. J. Simons**,
Minimum-variance multitaper spectral estimation on the sphere,
J. Fourier Anal. Appl., Invited Paper, 28 pp, http://dx.doi.org/10.1007/s00041-006-6904-1

F. J. Simons & F. A. Dahlen[P],
A spatiospectral localization approach to estimating potential fields on the surface of a sphere from noisy, incomplete data taken at satellite altitudes,
Proc. SPIE, Invited Paper, 15 pp, http://dx.doi.org/10.1117/12.732406

2006 **F. J. Simons**, Ben D. E. Dando[$] & Richard M. Allen,
Automatic detection and rapid determination of earthquake magnitude by wavelet multiscale analysis of the primary arrival,
Earth & Planet. Sc. Lett., 10 pp, http://dx.doi.org/10.1016/j.epsl.2006.07.039

F. J. Simons & F. A. Dahlen,
Spherical Slepian functions and the polar gap in geodesy,
Geoph. J. Int., 23 pp, http://dx.doi.org/10.1111/j.1365-246X.2006.03065.x

F. J. Simons, F. A. Dahlen & Mark A. Wieczorek,
Spatiospectral concentration on a sphere,
SIAM Review, 33 pp, http://dx.doi.org/10.1137/S0036144504445765

2005 Mark A. Wieczorek & **F. J. Simons**,
Localized spectral analysis on the sphere,
Geoph. J. Int., 21 pp, http://dx.doi.org/10.1111/j.1365-246X.2005.02687.x

Saskia Goes, **F. J. Simons** & Kazunori Yoshizawa,
Seismic constraints on the temperature of the Australian uppermost mantle,
Earth & Planet. Sc. Lett., 11 pp, http://dx.doi.org/10.1016/j.epsl.2005.05.001

2003 **F. J. Simons** & Rob D. van der Hilst,
Seismic and mechanical anisotropy and the past and present deformation of the Australian lithosphere,
Earth & Planet. Sc. Lett., 16+2 pp, http://dx.doi.org/10.1016/S0012-821X(03)00198-5

F. J. Simons, Rob D. van der Hilst & Maria T. Zuber,
Spatiospectral localization of isostatic coherence anisotropy in Australia and its relation to seismic anisotropy: Implications for lithospheric deformation,
J. Geoph. Res., 21 pp, http://dx.doi.org/10.1029/2001JB000704

2002 **F. J. Simons**, Rob D. van der Hilst, Jean-Paul Montagner & Alet Zielhuis,
Multimode Rayleigh wave inversion for heterogeneity and azimuthal anisotropy of the Australian upper mantle,
Geoph. J. Int., 17 pp, http://dx.doi.org/10.1046/j.1365-246X.2002.01787.x

F. J. Simons & Rob D. van der Hilst,
Age-dependent seismic thickness and mechanical strength of the Australian lithosphere,
Geoph. Res. Lett., 4 pp, http://dx.doi.org/10.1029/2002GL014962

2000 **F. J. Simons**, Maria T. Zuber & Jun Korenaga,
Isostatic response of the Australian lithosphere: Estimation of effective elastic thickness and anisotropy using multitaper spectral analysis,
J. Geoph. Res., 22 pp, http://dx.doi.org/10.1029/2000JB900157

1999 **F. J. Simons**, Alet Zielhuis & Rob D. van der Hilst,
The deep structure of the Australian continent from surface-wave tomography,
Lithos, 27 pp, http://dx.doi.org/10.1016/S0024-4937(99)00041-9

1997 **F. J. Simons**, Frédéric Verhelst & Rudy Swennen,
Quantitative characterization of coal by means of microfocal X-ray Computed Microtomography (CMT) and Color Image Analysis (CIA),
Intern. J. Coal Geol., 20 pp, http://dx.doi.org/10.1016/S0166-5162(97)00011-6

OTHER *A chronological list of conference papers, white papers, patents, and "forum" pieces:*

2016 Dmitry Borisov, R. Modrak, H. Rusmanugroho, Yanhua O. Yuan*, Fuchun Gao, **F. J. Simons** & J. Tromp,
Spectral-element based 3D elastic full-waveform inversion of surface waves in the presence of complex topography using an envelope-based misfit function,
SEG Tech. Prog. Expanded Abstracts, 5 pp, http://dx.doi.org/10.1190/segam2016-13843759.1

2015 Alain Plattner & **F. J. Simons**,
Mars' heterogeneous South Polar magnetic field revealed using altitude vector Slepian functions,
46th Lunar and Planetary Science Conference, Abstract No. 1794, 2 pp

Christopher Harig°, Kevin W. Lewis°, Alain Plattner° & **F. J. Simons**,
A suite of software analyzes data on the sphere,
Eos Trans. AGU, 5 pp, http://dx.doi.org/10.1029/2015EO025851

2014 Yanhua O. Yuan*, **F. J. Simons** & Ebru Bozdağ,
Full-waveform adjoint tomography in a multiscale perspective,
SEG Tech. Prog. Expanded Abstracts, 6 pp, http://dx.doi.org/10.1190/segam2014-0816.1

2013 **F. J. Simons** & Harold T. Vincent,
Son-O-Mermaid: Marine instrumentation for geophysical measurements in the oceans,
United States Provisional Patent Application, 61911637 (expired)

Kevin W. Lewis°, **F. J. Simons** & Gabe L. Eggers$^{\$}$,
Maximum-likelihood estimation of lithospheric thickness on Venus,
44th Lunar and Planetary Science Conference, Abstract No. 2612, 2 pp

2012 L. Ridgway Scott^{T}& twenty-six alphabetized others,
Fostering interactions between the geosciences & mathematics, statistics, and computer science,
University of Chicago Department of Computer Science, Technical Report, TR-2012-02, 32 pp

Alain Plattner°, **F. J. Simons** & Liying Wei†,
Analysis of real vector fields on the sphere using Slepian functions,
IEEE Stat. Signal Proc. Workshop (SSP), 4 pp, http://dx.doi.org/10.1109/SSP.2012.6319659

2011 Kevin W. Lewis° & **F. J. Simons**,
Spatial variability of the Martian crustal magnetic field,
42nd Lunar and Planetary Science Conference, Abstract No. 2621, 2 pp

2010 **F. J. Simons**,
Turning freshmen into scientists with field research and quantitative analysis of geoscientific data,
MATLAB *Digest* | *Academic Edition*, October 2010, 1–3

2009 **F. J. Simons**,
Afloat on a sea of noise,
NERC Magazine Planet Earth, 2009 (Winter), 28–29

2006 Laurent G. J. Montési, Giulio di Toro, **F. J. Simons** & five others,
Young scientists focus on the dynamics of the lithosphere,
Eos Trans. AGU, 2 pp, http://dx.doi.org/10.1029/2006EO440005

F. J. Simons, Guust Nolet, Jeff M. Babcock, Russ E. Davis & John A. Orcutt,
A future for drifting seismic networks,
Eos Trans. AGU, 2 pp, http://dx.doi.org/10.1029/2006EO310002

Malcolm S. Sambridge, Caroline Beghein, **F. J. Simons** & Roel Snieder,
How do we understand and visualize uncertainty?
The Leading Edge, 5 pp, http://dx.doi.org/10.1190/1.2202654

2005 **F. J. Simons**, Thorsten W. Becker, James B. Kellogg & five others,
MYRES: A program to unite young solid Earth researchers,
Eos Trans. AGU, 2 pp, http://dx.doi.org/10.1029/2005EO050005

2004 **F. J. Simons**, Thorsten W. Becker, James B. Kellogg & six others,
Young solid Earth researchers of the world unite!
Eos Trans. AGU, 2 pp, http://dx.doi.org/10.1029/2004EO160011

MEDIA

Interviews, personal profiles, media comments, passing mentions, videos, webcast lectures:

Fellows voorgedragen door het Departement Aard- en Omgevingswetenschappen,
Wet.kuleuven.be/fellows/geologie.html, 10/21/2014 (web, in Dutch)

Size doesn't matter: a sampling of Princeton's smallest departments, by Margot Yale,
The Daily Princetonian, 04/10/2014

Searching for bones, finding wisdom within the earth, by Morgan Kelly,
News@Princeton, 12/02/2013 (web)

Freshman Seminar 187: Earth's Environments and Ancient Civilizations, by D. Alio,
`http://vimeo.com/79706110`

Double Brook Farm gets Ivy credentials, by Robin McConaughy,
Blog.doublebrookfarm.com, 9/10/2013 (web)

The daily grind: Princeton lab uncovers the planetary past hidden in rocks, by M. Kelly,
News@Princeton, 8/15/2013 (web)

Niets moet, (bijna) alles kan. Hoe is het nu met: Frederik Simons,
Science@Leuven, 2013, **11** (41), 19–21 (in Dutch)

Promoting sparsity and localization in geophysical inverse problems,
Lecture at Oxford U., 1/18/2013, `http://youtu.be/xK3Yk4jexTo`

A 'City of Gold' unearths new educational opportunities, by Jamie Saxon,
News@Princeton, 11/29/2012 (web)

MERMAIDs detect distant earthquakes, by Naomi Lubick,
Nature, 10/07/2011, `http://dx.doi.org/10.1038/news.2011.583`

Promoting sparsity and localization in geophysical inverse problems,
Lecture at Northwestern U., 10/03/2011, `http://youtu.be/KL66it65bho`

Compressed sensing in geology and geophysics,
Lecture at Harvard U., 2/14/2011, `http://youtu.be/6q-uGS6H7tA`

On loyalty and legacy, by Tara Thean,
The Daily Princetonian, 05/14/2010

This is how it works,
Cornell Daily Sun, 10/29/2009

Seismic stations could help catch tsunami waves, by Katharine Sanderson,
Nature, 02/25/2008, `http://dx.doi.org/10.1038/news.2008.618`

Around the world in seven days of Fall Break, by Michelle Wu,
The Daily Princetonian, 12/10/2007

Iedereen geoloog! Hoe gaat het nu met... Frederik Simons,
Science@Leuven, 2005, **3** (8), 7–9 (in Dutch)

Neutrinos to spy on planet's core,
New Scientist, 2005, **185** (2488)

Interview, Television broadcast,
Discovery Channel, WagTV, 2005

On "*Seismic monitoring in the oceans by autonomous floats*", "*On the potential of recording earthquakes for global seismic tomography by low-cost autonomous instruments in the oceans*", "*A future for drifting seismic networks*", and more generally speaking, on MERMAID and Son-O-Mermaid:

Son-o-Mermaid takes to the waters, by Catherine Zandonella,
Discovery – Research at Princeton, 2015, 3

Ocean robots listen for earthquake echoes, by Eric Hand,
Science, 2015, http://dx.doi.org/10.1126/science.349.6252.1033

Global seismic network takes to the seas, by Nicola Jones,
Nature, 03/12/2014, http://dx.doi.org/10.1038/507151a

Wenn Meerjungfrauen Erdbeben detektieren, by Dagmar Röhrlich,
Deutschlandfunk.de, 12/12/2013 (web & radio, in German)

Floating seismic devices peer deep beneath ocean floor, by Tia Ghose,
LiveScience.com, 12/10/2013 (web)

Mermaids exist! And they are seismically sensitive, by Christina Reed,
Discovery.com, 12/09/2013 (web)

Secrets of the Southern Ocean, by Tara Thean,
Discovery – Research at Princeton, 2013, 18–22

Des "sirènes" au large de la Réunion, by Fiorenza Gracci,
La Recherche, 2012, **465**, 32 (in French)

Grâce à MERMAID, les enregistrements sismiques dans les domaines océaniques lointains seront désormais possibles,
Insu.cnrs.fr, 11/04/2011 (in French)

Modern mermaids: New floats image the deep Earth, by Yann Hello et al.,
Eos Trans. AGU, 2011, http://dx.doi.org/10.1029/2011EO400001

Afloat in [on] a sea of noise,
Planet Earth, 2009 (Winter), 28–29

Energy Efficient Mermaid (Mobile Earthquake Recorder in Marine Areas),
Green Data Center Blog, www.greenm3.com, 02/19/2008 (web)

Plumbing the depths: A new generation of mermaids looks at oceanic earthquakes,
The Economist, 02/09/2008

For geoscientist Simons, Earth's deepest secrets may come from the sea, by C. Boutin,
Princeton Weekly Bulletin, 2008, **97** (19), 7–8 & *News@Princeton*, 01/28/2008 (web)
GeologyTimes.com, 01/29/2008 (web) & *Underwatertimes.com*, 01/29/2008 (web)

Fyrirlestur um jarðskjálftabylgjur: Dr. Frederik J Simons,
Morgunblaðið, 04/20/2007 (in Icelandic)

Under veraldar: Sneiðmyndun jarðar,
Rannísblaðið, 03/28/2007 (in Icelandic)

MERMAIDs detect earthquakes,
Top Stories, *UCL Homepage News*, 06/27/2006 (web)

Earth Structure, by Guust Nolet, John A. Orcutt & John Collins,
ORION *Puerto Rico Workshop Report*, 2004, 28–34

On "*Accelerated West Antarctic ice mass loss continues to outpace East Antarctic gains:*"

Climate past, present and future, by Dana Mackenzie,
What's Happening in the Mathematical Sciences? Vol 10, 2015,

Antarctica is gaining ice, so why is the Earth still warming?, by Elizabeth Newbern,
LiveScience.com, 11/19/2015 (web)

A controversial NASA study says Antarctica is gaining ice. Here's why you should be skeptical, by Chris Mooney,
The Washington Post, 11/05/2015

The long future of Antarctic melting, by Alexander Robel,
Nature, 10/14/2015, `http://dx.doi.org/10.1038/526327a`

'Stable' region of Antarctica is melting, by Jeff Tollefson,
Nature, 05/21/2015, `http://dx.doi.org/10.1038/nature.2015.17606`

Ice loss in west Antarctica is speeding up, by John Abraham,
The Guardian, 05/11/2015 (web)

Verdwijnen ijs aan de zuidpool is nu "onomkeerbaar", by Mick Van Loon,
Newsmonkey.be, 05/11/2015 (in Dutch)

Melting ice sheet runaway problem, by Melanie Gosling,
Cape Times, 05/11/2015
Pretoria News, 05/11/2015
IOL.co.za, 05/11/2015 (web)

Antarctic ice sheet melting at a faster rate, new gravity data shows, by Ravi Mandalia,
Techienews.co.uk, 05/11/2015

Antarctica's ice sheets are melting faster each year, by Lord Marin,
Biztekmojo.com, 05/11/2015 (web)

Princeton-forskere: Is-smeltingen i Antarktis kan løpe løpsk, by Halldor Hustadnes,
Dagbladet, 05/09/2015 (in Norwegian)

Ny studie: Antarktis smelter raskere enn antatt, by Elisabeth Bergskaug,
ABCnyheter.no, 05/09/2015 (in Norwegian)

Scientists warn of runaway West Antarctic ice melt,
Scientists weigh up new evidence on Antarctic ice melt, by Tim Radford,
Climatechangenews.com, 05/10/2015 (web)
Globalpossibilities.org, 05/10/2015 (web)
Climatenewsnetwork.net, 05/07/2015 (web)
Truthdig.com, 05/07/2015 (web)

Failure to act now on emissions could raise oceans by metres, by Graham Readfearn,
The Guardian, 05/05/2015 (web)

Antarctica is melting faster than ever before, by Mary Beth Griggs,
BusinessInsider.com, 05/07/2015 (web)
Popsci.com, 05/05/2015 (web)

Past and present melting rates point to 3m rise by end of century, by Jayalakshmi K,
International Business Times, 05/05/2015

Scientists horrified by speed of glaciers melting, by Russell Jackson,
The Scotsman, 05/04/2015 (web)

Los datos gravimétricos de la misión GRACE indican que la pérdida de hielo en la Antártida se está acelerando,
NoticiasdelaCiencia.com, 05/04/2015 (in Spanish)

Antarctica's ice loss increased by 6 billion tons per year in over a decade, by T. Shirole,
Medindia.net, 05/03/2015 (web)

Gravity data shows Antarctic ice sheet is melting much faster,
Delhi Daily News, 05/02/2015 (web)

Fonte accélérée en Antarctique, selon les données GRACE, by Johan Lorck,
Global-climat.com, 05/01/2015 (in French)

Antarctic ice loss accelerating, by Christopher Keating,
Dialoguesonglobalwarming.blogspot.com, 05/01/2015 (web)

Antarctica is melting faster than ever, by Jenna Iacurci,
Nature World News, 05/01/2015 (web)

Satellite data helps pinpoint Antarctic ice loss, by Bob Berwyn,
Summit County Voice, 05/01/2015 (web)

Antarctica's ice sheet is melting faster than ever, revealed with new gravity data,
by Catherine Griffin
Science World Report, 05/01/2015

Gravity data show that Antarctic ice sheet is melting increasingly faster, by M. Kelly,
News@Princeton, 04/30/2015 (web)

The quest to determine Antarctica's contribution to sea-level change, by Matt King,
Royal Society Kavli Lecture, 04/28/2015, `https://youtu.be/E8qfbStNi1s`

Il congelatore del Polo Sud ha dei problemi, by Sylvestre Huet,
ADUC.it, 04/07/2015 (in Italian)

La Terre perd son congélateur, by Sylvestre Huet,
Libération, 04/02/2015 (in French)

On "*Ice mass loss in Greenland, the Gulf of Alaska and the Canadian Archipelago*:

Satellites detect both steady and accelerated ice loss, by Christina Langone,
GlacierHub, 05/24/2016

Scientists use gravity to measure Arctic glacier loss, by Lisa Gregoire,
NunatsiaqOnline, 04/05/2016

The vast, shrinking northern glaciers that we never even talk about, by Chris Mooney,
The Washington Post, 03/17/2016
Hamilton Spectator, 03/17/2016

On "*Mapping Greenland's mass loss in space and time*":

Climate Change 2013: The Physical Science Basis,
Intergovernmental Panel on Climate Change, Fifth Assessment Report, 2013

New science upsets calculations on sea level rise, climate change, by Lewis Page,
The Register, 11/28/2012 (web)

Embracing data 'noise' brings Greenland's complex ice melt into focus, by M. Kelly,
News@Princeton, 11/27/2012 (web)

Änderungen in der Schwerkraft verraten Eisschmelze,
derStandard.at, 11/24/2012 (in German)

Le Groenland fond avec gravité, by Sylvestre Huet,
Libération, 11/22/2012 (in French)

De rafelranden van de ijskap, by Elmar Veerman,
NPOwetenschap.nl, 11/21/2012 (in Dutch)

Eisschild schrumpft jährlich um 200 Mrd. Tonnen,
Science@ORF.at, 11/20/2012 (in German)

Schwerkraft-Messung zeigt massive Eisschmelze,
Die Welt, 11/20/2012 (in German)

Greenland ice loss is accelerating, by Sunanda Creagh,
TheConversation.edu.au, 11/20/2012 (web)

Greenland ice is melting at ever faster rates, by Laura Sinpetru,
Softpedia.com, 11/20/2012 (web)

Geoscientists report Greenland ice sheet melting rate is increasing, by Bob Yirka,
Phys.org, 11/20/2012 (web)

Greenland ice melt accelerating, by Larry O'Hanlon,
ABC.net.au, 11/20/2012 (web)

Wechselnde Schwerkraft zeigt Schmelzen des Grönlandeises,
Focus.de, 11/19/2012 (in German)

Eispanzer Grönlands schmilzt ungleichmässig ab,
Südostschweiz.ch, 11/19/2012 (in German)
Blick.ch, 11/19/2012 (in German)

Greenland ice melt accelerating, by Douglas Main,
CBSNews.com, 11/19/2012 (web)
OurAmazingPlanet.com, 11/19/2012 (web)

Greenland is losing 200 billion tons of ice every year, by Randy Astaiza,
BusinessInsider.com, 11/19/2012 (web)

Greenland loses 200 billion tons ice per year, by Larry O'Hanlon,
MSNBC.msn.com, 12/03/2012 (web)
LiveScience.com, 11/19/2012 (web)
Discovery.com, 11/19/2012 (web)

On "*Probabilistic assessment of sea level during the last interglacial stage*":

Climate Change 2013: The Physical Science Basis,
Intergovernmental Panel on Climate Change, Fifth Assessment Report, 2013

Sea rose eight metres in warmer age: study,
The Independent, 12/20/2009

How high will the seas go in a warmer world?, Michael D. Lemonick
Time Magazine, 12/18/2009

Professors say sea levels sensitive to warmth, by Sophia Jih,
The Daily Princetonian, 12/18/2009

Little global warming goes a long way,
Futurity.org, 12/18/2009 (web)

After Copenhagen, climate talks that will work, by Sharon Begley,
Newsweek, 12/17/2009

Greater sea-level rise from warming predicted, by Juliet Eilperin,
The Washington Post, 12/17/2009

Scientists warn of 30ft rise in sea level due to 2C of global warming,
The Scotsman, 12/17/2009

Forskare varnar för höga havsnivåer, by P. O. Lindström,
DN.se, 12/16/2009 (in Danish)

Estudo aponta que nível dos oceanos pode subir 9 metros,
Estadao, 12/16/2009 (in Spanish)

Plus 3 à 5 degrés aux pôles, et l'eau montera de 8 à 9 mètres,
L'Express, 12/16/2009 (in French)
Le Soir, 12/16/2009 (in French)

Study suggests greater sea level rise from warming, by Malcolm Ritter,
The New York Times, 12/16/2009
The Boston Globe, 12/16/2009
U. S. News & World Report, 12/16/2009

Two-degree temperature rise could flood wide areas of planet, study says, by M. Munro,
Canada.com, 12/16/2009 (web)
CommonDreams.org, 12/17/2009 (web)

Study forecasts 9m sea-level rise if temperatures meet 2C threshold, by Alok Jha,
The Guardian, 12/16/2009

Earth's polar ice sheets vulnerable to even moderate global warming, by Steven Barnes,
News@Princeton, 12/16/2009 (web)
Harvard Gazette, 12/16/2009 (web)
HighBeam Research, 09/30/2013 (web)

Interglacial and future sea level, by Peter U. Clark & Peter Huybers,
Nature, 2009, `http://dx.doi.org/10.1038/462856a`

Sea level rise may exceed worst expectations, by Richard A. Lovett,
Nature, 12/16/2009, `http://dx.doi.org/10.1038/news.2009.1146`

On "*Possible animal body-fossils in pre-Marinoan limestones from South Australia*":

A history of Earth in 100 groundbreaking discoveries, by Douglas Palmer,
Firefly Books, 2011

From single cells, a vast kingdom arose, by Carl Zimmer,
New York Times, 03/14/2011

Fossils may be oldest animals, by W. Raymond Ollwerther,
Princeton Alumni Weekly, 09/22/2010

Discovery of 650-million-year-old sponge-like creatures pushes back fossil record; Reef-dwelling creatures on 'Snowball Earth',
Underwatertimes.com, 08/19/2010 (web)/

Fossilised sponges point to animal life 100m years earlier than thought, by Alok Jha,
The Guardian, 08/17/2010

Sponge fossils may be earliest animals,
Futurity.org, 08/17/2010 (web)

Found: World's oldest animal fossils, by James O'Donoghue,
NewScientist, 08/17/2010

Discovery of possible earliest animal life pushes back fossil record,
NSF Press Release, 10-143, 08/17/2010

Possible discovery of earliest animal life pushes back fossil record, by Hilary Parker,
ScienceDaily, 08/17/2010 (web)
News@Princeton, 08/17/2010 (web)

Palaeontology: Wringing out the oldest sponges, by Marc Laflamme,
Nature Geoscience, 2010, `http://dx.doi.org/10.1038/ngeo945`

On "*Spectral estimation on a sphere in geophysics and cosmology*":

Editorial, by Cynthia J. Ebinger,
Geoph. J. Int., 2008, **174** (3), 773

On "*Spatiospectral concentration on a sphere*":

Problems & Techniques, by Ilse Ipsen,
SIAM Review, 2006, **48** (3), 485–486

On "*The deep structure of the Australian continent from surface-wave tomography*":

A seismic look under the continents, by Karen M. Fischer & Rob D. van der Hilst,
Science, 1999, `http://dx.doi.org/10.1126/science.285.5432.1365`

On "*On the robustness of estimates of mechanical anisotropy in the continental lithosphere*":

Continental complexity, by Amy Whitchurch,
Nature Geoscience, 2015, `http://dx.doi.org/10.1038/ngeo2479`