

CURRICULUM VITAE: MARK SIMONS

Seismological Laboratory
Division of Geological and Planetary Sciences
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Research Interests

Processes that deform the solid earth and other planets and moons, including those associated with the seismic cycle, migration of magma and water in the subsurface, tides, and glacial rebound; Tectonics and the relationship between short- and long-time scale processes; Glaciology, particularly basal mechanics, and ice rheology; Geophysics of Ocean Worlds, particularly Enceladus. Space geodesy and associated applications, particularly using GNSS and SAR; Bayesian methods for large geophysical inverse problems.

Languages

English (fluent), French (fluent), Norwegian (passable), and Spanish (passable).

Education

Ph.D. Geophysics, “Localization of gravity and topography: Constraints on the tectonics and mantle dynamics of Earth and Venus”, MIT, 1996 (Advisors: B.H. Hager and S.C. Solomon).
B.Sc. Geophysics and Space Physics, UCLA, June 1989
Univ. of California education abroad program at the Univ. of Bergen, Norway, 1987-1988.
UC Santa Barbara, 1983-1985 (concurrent with high school)

Employment

Current:

Director, The Brinson Exploration Hub, Caltech, 2024-
John W. and Herberta M. Miles Endowed Professorial Chair, Caltech, Pasadena, California, 2017-
Professor of Geophysics, Caltech, Pasadena, California, 2007-

Past:

Chief Scientist, Jet Propulsion Laboratory / NASA / Caltech, 2017-2023
Visiting Distinguished Professor, U. Joseph Fourier, Grenoble, France, Winter/Spring 2012
Visiting Professor, Ecole Normale Supérieure, Paris, France, Fall 2007
Visiting Professor, Institut de Physique du Globe de Paris, Paris, France, Fall 2007
Associate Professor of Geophysics, Caltech, Pasadena, California, 2003-2007
Assistant Professor of Geophysics, Caltech, Pasadena, California, 1997-2003
Postdoctoral Scholar, Caltech, Pasadena, California, 1995-1997
Graduate Research Assistant, Earth, Atmospheric and Planetary Sciences, MIT, 1989-1995
Teaching Assistant, Earth, Atmospheric and Planetary Sciences, MIT, Fall 1992
Laboratory Assistant, Dept. of Earth and Space Sciences, UCLA, 1989
Programmer, Norsk Hydro Research Center, Bergen, Norway, Summer 1988
English composition tutor, UCLA writing programs, 1986-1988

Honors and Awards

IEEE Senior Member, 2022
Fellow of the American Geophysical Union, 2018
American Geophysical Union William Bowie Lecturer, 2016
NASA Group Achievement Award, *Nepal Earthquake Disaster Response Team*, 2016

The Presidential Early Career Award for Scientists and Engineers (NASA), 2002
Volvo Graduate Fellow, Frontiers of Science, National Academy of Sciences, 1995
Outstanding Student Planetology Paper, American Geophysical Union, Spring, 1993
NSF Graduate fellowship honorable mention, 1989 and 1990
UCLA Deans Honors and College Honors, 1989
Handin Undergraduate Scholarship, UCLA, 1988-1989
C.W. Ball Award, Earth and Space Sciences, UCLA, 1988
Society of Exploration Geophysicists Scholarship, 1985-1989
Phi Eta Sigma, 1986

Outside Professional Activities

Current:

NISAR satellite mission science team member, 2012-, co-lead (solid earth science) 2016-
American Geophysical Union, 1989 -
IEEE member, 2021, Senior member, 2022 -
Western North American InSAR Data Consortium (WInSAR), Executive Committee, vice-chair:
1999-2002, Chair: 2002-2004, Ex-officio: 2004-2006, Institutional Representative, 1999 -

Past:

UNAVCO Institutional Representative: 2008 - 2023
Computational Infrastructure for Geodynamics (CIG), Crustal Deformation Modelling workshop –
co-organizer, summer 2022
Scientific Committee, Living Planet Symposium, European Space Agency, Bonn (Germany), 2022
Scientific Committee, Living Planet Symposium, European Space Agency, Milan (Italy), 2019
Workshop on Future Seismic and Geodetic Facility Needs in the Geosciences (NSF) – Session
organizer and Report co-editor (2015)
Session chair - State-of-the-art use of dense geodetic data, UNAVCO, 2014
Session chair - The extent to which large portions of major faults slip both seismically and
aseismically - observations and implications, Fall AGU, 2013
Session co-organizer - The Great 11 March 2011 Tohoku-Oki Earthquake, Fall AGU, 2011
BSSA Special issue on the 2011 Tohoku Earthquake and Tsunami, Guest co-Editor, 2011-2013
NASA Earth Science Subcommittee: 2006-2013
UNAVCO Strategic Planning Committee: May 4-7, 2008
NASA Earth Sun System Subcommittee (ES³): 2005
U. S. Plate Boundary Observatory Standing Committee: 2002-2008 (Vice-Chair).
Workshop on Community Finite Element Models for Fault Systems and Tectonic Studies: Organizing
Committee: 2002-2010, chair: 2002-2007
Southern California Earthquake Center-Geodesy group co-chair: 2002-2006
InSAR Workshop, Oxnard, CA, organizing committee: Oct 20-22, 2004
NASA Solid Earth Science Working Group (SESWG): 2000-2003
Earthscope Working Group: 1999-2002
Making and Breaking a Continent - EarthScope workshop organizing committee: 2001
Workshop on Scientific Applications of Synthetic Aperture Radar (SAR) Satellites, Local Organizing
Committee: 2000
Session co-organizer - InSAR Imaging of Active Magmatic Processes I, *Fall AGU*, 1999
Session co-organizer - The interior of Venus: Latest results from Magellan, *Fall AGU*, 1993

Teaching

Ge 102 Introduction to Geophysics (Graduate) - 2005, 2006, 2007, 2008, 2009
Ge 111a Applied geophysics (seminar) - 2000, 2001, 2002, 2003, 2004-2006, 2010-2024
Ge 111b Applied geophysics (field) - 2000, 2001, 2002, 2004-2006, 2010-2023
Ge 163 Geodynamics - 2006, 2009

Ge 164 Dynamics of the Lithosphere - 2003, 2004, 2005
Ge 165a Geophysical Data Analysis - 1999
Ge 167 Applied Tectonic Geodesy - 2009, 2011, 2013, 2015, 2020, 2021, 2023
Ge 169 Inverse theory for Earth scientists - 2000, 2001, 2002, 2003
Ge 193 Applied Tectonic Geodesy - 2006
ACM/ESE 118 Methods in Applied Statistics and Data Analysis - 2013

Postdocs Supervised

Simone Puel (current), Amir Bagheri (current), Rishav Mallick, Yujie Zheng, Thea Ragon, Yunjun Zhang, Heresh Fattahi, Han Yue, Zachary Duputel, Romain Jolivet, Piyush Shanker Agram, Anthony Sladen, Eric Hetland, Pablo Muse, Yaru Hsu, Shelley Kenner, Yuri Fialko

Past and Present Ph.D. Students (Co-*)Advised

Leonid Pereiaslov (current), Alexander Berne (current), Yuan Kai Liu (current), Tobias Koehne (current), Ollie Stephenson, Minyan Zhong, Bryan Riel, Hilary Martens; Junle Jiang*, Joel Scheingross*, Brent Minchew, Madeline Miller*, Yu-Nung (Nina) Lin; Zhongwen Zhong*, Jeffrey Thompson; Belle Philibosian*; Francisco Ortega; Sarah Minson, Christopher DiCaprio, Ravi Kanda; Carl Tape*, Rowena Lohman, Matthew Pritchard, Ya-Ju Hsu*, Alex Song*, Magali Billen*

Papers in Refereed Journals

<http://simons.caltech.edu/publications/index.html>

<https://scholar.google.com/citations?hl=en&pli=1&user=yC4J7wMAAAAJ>

<https://orcid.org/0000-0003-1412-6395>