# CURRICULUM VITAE

**Roelof K. Snieder**
W.M. Keck Distinguished Professor of Professional Development Education
Center for Wave Phenomena and Office of Academic Affairs
Colorado School of Mines

Telephone: +1.303.273.3456
Email: rsnieder@mines.edu
http://www.mines.edu/∼rsnieder

**Education:**

- Ph.D. (cum laude), Geophysics, Utrecht University, Netherlands, 1987. Thesis title: Surface wave scattering theory, with applications to forward and inverse problems in seismology.
- M.A., Geophysical Fluid Dynamics, Princeton University, Princeton, USA, 1984.
- Drs. degree, Theoretical Physics, Utrecht University, Netherlands, 1982. Thesis title: Inverse scattering in three dimensions.

**Positions held:**

- Director of the Center for Wave Phenomena at the Colorado School of Mines (2021-present)
- W.M. Keck Distinguished Professor of Professional Development Education, Colorado School of Mines, USA (2017-present)
- Interim Department Head of Geophysics, Colorado School of Mines, USA (2016-2017)
- W.M. Keck Distinguished Professor of Basic Exploration Science, Colorado School of Mines, USA (2000-2017)
- Visiting professor at the GFZ German Research Centre for Geosciences and the German Federal Institute for Materials Research and Testing (July-December 2014)
- Director of the Center for Wave Phenomena at the Colorado School of Mines (2008-2011)
- Visiting professor at the Global Climate and Energy Project, Stanford University (January-June 2008)
- Dean of the Faculty of Earth Sciences, Utrecht University, Netherlands (1997-2000)
- Full professor in seismology at the Department of Geophysics of Utrecht University, Netherlands (1993-2000)
- Visiting professor at the Center for Wave Phenomena, Colorado School of Mines (1997)
- Associate professor in seismology at the Department of Geophysics of Utrecht University, Netherlands (1988-1993)
- Postdoctoral fellow in the "Equipe de Tomographie Geophysique" of the Institut de Physique du Globe in Paris, France (1988)

**Professional honors:**

- Vening-Meinesz award (1989), issued by the Netherlands Organization for Scientific Research (NWO)
- Recipient of a PIONIER grant from the Netherlands Organization for Scientific Research (NWO, 1991-1996)
- Award (1992), issued by the Fund for Science, Technology and Research (Schlumberger)
- Fellow of the American Geophyscial Union (2000) for important contributions to geophysical inverse theory, seismic tomography, and the theory of surface waves.award
- Faculty Teaching Award, Colorado School of Mines (2007)
- Nominated as "7Hero of the day" by 7News in Denver for work on energy education (2008).
- Corresponding member of the Royal Netherlands Academy of Arts and Sciences (2010-present)
- Excellence in Research Award, Colorado School of Mines, (2011)
- Honorary Member of the Society of Exploration Geophysicist (2011)
- Outstanding Faculty Member of the Order of Omega, Colorado School of Mines (2013)
- Outstanding Faculty Member Award of the Colorado School of Mines (2013)
- Among best 30 papers at the annual meeting of the Society of Exploration Geophysicists (F. Bazargani and R. Snieder, Optimal wave focusing for imaging and microseismic event location, 2013)
- Research Award from the Alexander von Humboldt Foundation (2014)
- Beno Gutenberg medal from the European Geophysical Union (2016)
- Outstanding Educator Award from the Society of Exploration Geophysicists (2016)
- Ange Melagro Prize for outstanding contributions to the McBride Honors Program, Colorado School of Mines (2020)
- Distinguished Lecturer of the Society of Exploration Geophysicists and the American Association of Petroleum Geologists (2022)
- Faculty Senate Distinguished Lecturer, Colorado School of Mines (2022)
- Tuzo Public Lecturer, University of Toronto (2023)
- Outstanding Faculty Award from the Colorado School of Mines Board of Trustees (2023)

**Editorships:**

- Associate editor of Geophysical Journal International (1990-1994)
- Guest editor of Physics of Earth and Planetary Interiors for the special issue on 'Structure and evolution of the European lithosphere and upper mantle' (1993)

- Associate Editor of Inverse Problems (1994-1997)
- Editor of Reviews of Geophysics (1997-2001)
- Guest editor of Inverse Problems for the special issue on "Inverse Problems in Geophysics" (1998)
- Associate editor of the book "Scattering and inverse scattering in pure and applied science", published by Academic Press (2002)
- Associate editor of the Journal of Acoustical Society of America (2009-present)
- Associate editor of the European Journal of Physics (2011-present)

**Other professional activities:**

- Invited lecturer at the Summer School on Studies of Earthquake Sources and Regional Lithospheric Structure based on Seismic Wave Data, Trieste, Italy (1990)
- Member of the Commission on Wave Propagation of the International Association of Seismology and Physics of the Earth's Interior (1992-1995)
- Member of the scientific organizing committee for the 7th conference of the European Union of Geosciences (1992-1993)
- Member of the sectorcommittee 'Endogene Processen' of AWON, the Earth Science branche of NWO (1992-1993)
- Vice-chairman of the Committee for Mathematical Geophysics (1997-1999)
- General convener of the seismology sector of the XIX-th conference of the European Geophysical Society (1994)
- Chairman of the selection committee of The Netherlands Geoscience Foundation (GOA) (1994-1996)
- Member of the scientific advisory committee for ORFEUS-EMSC (1994-1998)
- Invited lecturer at the Summer School on Three-dimensional modeling of seismic waves, Trieste, Italy (1996)
- Member of the scientific advisory committee the XX-th conference of the European Geophysical Society (1996)
- Invited lecturer at the Summer School on Wave Propagation in Complex Media, Les Houches, France (1998)
- Invited lecturer at the Summer School on Geomatics and Inverse Problems in Geodesy, Chania, Greece (1998)
- Invited lecturer at the Summer School on the Identification of Media and Structures by Inversion of Mechanical Wave Propagation, Udine, Italy, (1998)
- Invited lecturer at the Summer School on Imaging in complex media, Cargese, France (1999)

- Invited lecturer at the Mathematical Geophysics Summer School, Stanford University, USA (1999)
- Invited lecturer at the internal symposium of Schlumberger Research on "Inversion, Optimization and ncertainty Analysis", Cambridge UK (2000)
- Member of NSF-panel (2001)
- Invited speaker at the Optical Society of America Topical Meeting on "Signal Recovery and Synthesis" (2001)
- Organizer of the session "Mathematical Seismology: Summer School and Research Opportunities" at the annual IRIS meeting (2001)
- Chairman of the selection panel of the program "Waves in Complex Media" of FOM (the Physics branch of the Science Foundation of the Netherlands).
- Member of NSF-panel (2002)
- Invited speaker at the GilbertFest (2002)
- Member of the Lehmann Medal Committee of the American Geophysical Union (2002-2004)
- Member of the advisory board of the research Group IMCODE (Imagerie, Communication et Desordre) (2003-2007)
- Member of the Earth Science Council of the Department of Energy (2003-2011)
- Convener of the session "Novel ways for analyzing the seismic coda" at the Fall AGU meeting (2003)
- Director of the NSF-sponsored Summer School on Mathematical Geophysics and Uncertainty in Earth Models (2004)
- Convener of the session "Oil at the core-mantle boundary?: bridging the gap between exploration and global seismology" at the Fall AGU meeting (2004)
- Organizer of the Department of Energy workshop "Advanced noninvasive monitoring techniques" (2005)
- Visiting Fellow at the Research School of Earth Sciences at Australian National University, Canberra, Australia (2006)
- Member of organizing committee and panel leader for the Department of Energy workshop and report "Basic Research Needs in the Geosciences: Facilitating 21st Century Energy Systems" (2007)
- Member of the selection committee for the "Spinoza prize" of the Netherlands Organisation for Scientific Research (2007-2010)
- Founding member and Chair of the committee Geoscientists Without Borders of the Society of Exploration Geophysicists (2008-2013)
- Convener of the session "Innovations in geophysics: a tribute to Rodney Calvert" at the 2008 Annual Meeting of the Society of Exploration Geophysicists.

- Convener of the Public Affairs session "Increasing the societal impact of geophysics at the 2008 Fall Meeting of the American Geophysical Union.
- Invited speaker at the NATO advanced research workshop on coupled site and soil-structure interaction, Borovets, Bulgaria, 2008
- Director of the Center for Wave Phenomena (2008-2011).
- Visiting professor of the Center of Excellence Program of Tohoku University, Sendai, Japan (2009).
- Member of the Diversity Committee of the Colorado School of Mines (2009-present).
- Visiting Fellow at the Australian National University, Canberra, Australia (2009).
- Member of the steering committee of the Red Rocks Community College Institute for Sustainability Education (RISE) (2010-present).
- Convener at the 2010 annual meeting of the American Geophysical Union.
- Chair of the Committee for Ethics Across the Curriculum of the Colorado School of Mines (2011-present).
- Invited lecturer in the Winter Enrichment Program at King Abdullah University of Science and Technology (KAUST) in Jeddah, Saudi Arabia (2011).
- Keynote speaker in the session "Enhancing graduate education in physics: focus on skills" at the Annual meeting of the American Physical Society in Dallas (2011).
- Invited lecturer for a faculty workshop "Career Development of Academic Faculty" at King Abdullah University of Science and Technology (KAUST) in Jeddah, Saudi Arabia (2012).
- Convener of the session "Solving Geophysical Problems" at the Conference for Mathematical Geophysics in Edinburgh (2012).
- SES Distinguished Speaker at Stanford University (2012).
- Member and of the selection committee for the "Gravitation Program" of the Netherlands Organisation for Scientific Research (2012 and 2013).
- Keynote speaker at the 39th Annual Review of Progress in Quantitative Nondestructive Evaluation (Denver, 2012).
- Invited speaker for four workshops on professional development for the Geo.X lecture series (Berlin, 2014).
- Member of the international advisory committee for the EC training network "Waves and Wave-Based Imaging in Virtual and Experimental Environments" (2015-2018).
- Member of the selection committee of the Beno Gutenberg Medal from the European Geophysical Union (2016-present).
- Convener at the 31st IUGG Conference on Mathematical Geophysics (Paris, 2016)

- Invited lecturer at the Advanced Training School on Time-Dependent Seismology (Sesimbra, Portugal 2016).
- Invited lecturer at the Summer School Passive Imaging and Monitoring in wave Physics: from seismology to ultrasound, Cargese, France (2017).
- Member of the CSM President's Council on Diversity, Inclusion and Access (2018).
- Astor Visiting Lecturer at Oxford University (2018).
- Recipient of the Distinguished Visitor Award from The University of Auckland Foundation (2018).
- Member of the visiting committee for the Earth Sciences at the Swiss Federal Institute of Technology (ETH, Zürich) (2018).
- Member of the Community of Experts of the European Science Foundation (2019-2022).
- Visiting Lecturer at Kyushu University, Fukuoka, Japan (2019).
- University of Leeds Green Lecturer (2019).
- Member of the Research Advisory Board of the Institute of Mine Seismology (2019-present).
- Chair of the Committee for Campus-wide Culture Changes at the Colorado School of Mines (2019-present)
- Member of the Evaluation Committee of the Department of Energy BES program at Lawrence Berkeley National Laboratory (2020)
- Certified instructor for QPR suicide prevention training (2020-2023)
- International advisor for the EU SPIN Innovation Training Network, (2021-2025)
- Director of the Center for Wave Phenomena (2021-present)

**Publications:** see attached lists with 297 internationally refereed publications, 3 textbooks [239, 255, 271], and 20 other publications. My h-index is 81 (Google Scholar).

**Patent:** Snieder, R., System for and method of monitoring properties of a fluid flowing through a pipe, US Patent 8,020,428 (2011)

**Grants:** see attached

**Memberships:**

- Royal Astronomical Society
- Society of Exploration Geophysicists
- American Geophysical Union
- Acoustical Society of America

**Volunteer work:**

- Firefighter with Genesee Fire Rescue (2000-2014), officer since 2003, and Fire Chief (2012-2014).

**References:**

- Dr. Michele Haney, President of Red Rocks Community College, 13300 West Sixth Avenue, Lakewood CO 80228, tel. +1.303.914.6215, email michele.haney@rrcc.edu
- Prof. Guust Nolet, Geosciences Azur, 250 Rue Albert Einstein, Sophia Antipolis 06560, France, tel +33.4.92.94.26.32, email nolet@geoazur.unice.fr
- Prof. Gerry Schuster, King Abdullah University of Science and Technology, Saudi Arabia, email gerard.schuster@kaust.edu.sa
- Prof. Kamini Singha, Dept. of Geology, Colorado School of Mines, ksingha@mines.edu
- Prof. Kees Wapenaar, Delft University of Technology, Faculty of Civil Enineering and Geosciences, email C.P.A.Wapenaar@TUDelft.NL
- Dr. Qin Zhu, Dept. of Engineering Education, Virginia Tech, qinzhu@vt.edu

## PUBLICATIONS


[1] D. Alsina and R. Snieder. Small-scale sublithospheric continental mantle deformation: Constraints from SKS splitting observations. *Geophysical Journal-oxford*, 123:431–448, 1995.

[2] D. Alsina and R. Snieder. Constraints on the velocity structure beneath the Tornquist-Teisseyre zone from beamforming analysis. *Geophysical Journal-oxford*, 126:205–218, 1996.

[3] D. Alsina, R. Snieder, and V. Maupin. A test of the great circle approximation in the analysis of surface waves. *Geophysical Research Letters*, 20:915–918, 1993.

[4] D. Alsina, R. Snieder, and V. Maupin. Reconstructions of phase fronts of surface waves recorded during the ILIHA project. In J. Mezcua and E. Carrreno, editors, *Iberian Lithosphere Heterogeneity and Anisotropy ILIHA, Monografia No. 10*, pages 75–83. Instituto Geografico Nacional, Madrid, 1994.

[5] D. Alsina, R. Woodward, and R. Snieder. Shear-wave velocity structure in North America from large-scale waveform inversions of surface waves. *Journal of Geophysical Research-space Physics*, 101:15969–15986, 1996.

[6] R. Andajani, T. Tsuji, R. Snieder, and T. Ikeda. Spatial and temporal influence of rainfall on crustal pore pressure based on seismic velocity monitoring. *Earth, Planets and Space*, 72:177, 2020.

[7] R. Andajani, T. Tsuji, R. Snieder, and T. Ikeda. Spatial and temporal influence of sea level of inland stress based on seismic velocity monitoring. *Earth, Planets and Space*, pages 74–97, 2022.

[8] B. Anderson, J. Douma, T. Ulrich, and S. R. Improving spatio-temporal focusing and source reconstruction through deconvolution. *Wave Motion. An International Journal Reporting Research on Wave Phenomena*, 52:151–159, 2015.

[9] S. Bannister, R. Snieder, and M. Passier. Shear-wave velocities under the transantarctic mountains and terror rift from surface wave inversion. *Geophysical Research Letters*, 27:281–285, 2000.

[10] F. Bazargani and R. Snieder. Optimal source imaging in elastic media. *Geophysical Journal-oxford*, 204:1134–1147, 2016.

[11] M. Behm and R. Snieder. Love waves from local traffic noise interferometry. *The Leading Edge*, 32:628–632, 2013.

[12] M. Behm, R. Snieder, and G. Leahy. Retrieval of local surface wave velocities from traffic noise - an example from the LaBarge basin (Wyoming). *Geophysical Prospecting*, 62, 2014.

[13] J. Behura and R. Snieder. Virtual real source: Source signature estimation using seismic interferometry. *Geophysics*, 78:Q57–Q68, 2013.

[14] J. Behura, K. Wapenaar, and R. Snieder. Autofocus imaging: Image reconstruction based on inverse scattering theory. *Geophysics*, 79:A19–A26, 2014.

[15] T. Blum, R. Snieder, K. van Wijk, and M. Willis. Theory and laboratory experiments of elastic wave scattering by dry planar fractures. *Journal of Geophysical Research-space Physics*, 116:B08218, 2011.

[16] T. Blum, K. van Wijk, and R. Snieder. Scattering amplitude of a single fracture under uniaxial stress. *Geophysical Journal-oxford*, 197:875–881, 2014.

[17] T. Blum, K. van Wijk, R. Snieder, and Willis. Laser excitation of a fracture source for elastic waves. *Physical Review Letters*, 107:275501, 2011.

[18] M. Bostock, J. VanDecar, and R. Snieder. Modelling teleseismic P-Wave propagation in the upper mantle using a parabolic approximation. *Bulletin of the Seismological Society of America*, 83:756–779, 1993.

[19] A. Brandenburg and R. Snieder. The attenuation of surface waves due to scattering. *Geophysical Journal*, 98:183–194, 1989.

[20] F. Broggini and R. Snieder. Connection of scattering principles: A visual and mathematical tour. *European Journal of Physics*, 33:593–613, 2012.

[21] F. Broggini, R. Snieder, and K. Wapenaar. Focusing the wavefield inside an unknown 1D medium: Beyond seismic interferometry. *Geophysics*, 77:A25–A28, 2012.

[22] F. Broggini, R. Snieder, and K. Wapenaar. Data-driven wavefield focusing and imaging with multidimensional deconvolution: Numerical examples from reflection data with internal multiples. *Geophysics*, 79:WA107–WA115, 2014.

[23] F. Broggini, K. Wapenaar, J. van der Neut, and R. Snieder. Data-driven Green's function retrieval and application to imaging with multidimensional deconvolution. *Journal of Geophysical Research, Solid Earth*, 119:425–441, 2014.

[24] S. Chevrot, J. Montagner, and R. Snieder. The spectrum of tomographic earth models. *Geophysical Journal-oxford*, 133:783–788, 1998.

[25] A. Curtis, P. Gerstoft, H. Sato, R. Snieder, and K. Wapenaar. Seismic interferometry – turning noise into signal. *The Leading Edge*, 25:1082–1092, 2006.

[26] A. Curtis and R. Snieder. Reconditioning inverse problems using the genetic algorithm and revised parameterisation. *Geophysics*, 62:1524–1532, 1997.

[27] A. Curtis and R. Snieder. Probing the earth's interior with seismic tomography. In W. Lee, H. Kanamori, P. Jennings, and C. Kisslinger, editors, *International Handbook of Earthquake and Engineering Seismology*, pages 861–874. Academic Press, Amsterdam, 2002.

[28] A. Curtis, J. Trampert, R. Snieder, and B. Dost. Eurasian fundamental mode surface wave phase velocities and their relationship with tectonic structures. *Journal of Geophysical Research-space Physics*, 103:26919–26947, 1998.

[29] D. DePaolo, F. Orr Jr., S. Benson, M. Celia, A. Felmy, K. Nagy, G. Fogg, R. Snieder, J. Davis, K. Pruess, J. Friedmann, M. Peters, N. Woodward, P. Dobson, K. Talahami, and M. Saarni. *Basic Research Needs for Geosciences: Facilitating 21st Century Energy Systems.* Department Of Energy, Office of Basic Energy Sciences, 2007.

[30] F. Deschamps, R. Snieder, and J. Trampert. The relative density-to-shear velocity scaling in the uppermost mantle. *Phys. Earth Plan. Int.*, 124:193–211, 2001.

[31] F. Deschamps, J. Trampert, and R. Snieder. Anomalies of temperature and iron in the uppermost mantle inferred from gravity data and tomographic models. *Phys. Earth Plan. Int.*, 129:245–264, 2002.

[32] J. Diaz, J. Gallart, A. Hirn, and H. Paulssen. Anisotropy beneath the iberian peninsula: The contribution of the ILIHA-NARS broad-band experiment. *Pure and Applied Geophysics*, 151:395–405, 1998.

[33] L. Diekmann, I. Vasconcelos, K. Wapenaar, E. Slob, and R. Snieder. Wavefield focusing using a generalised, potentially asymmetric homogeneous {Green's} function. *Wave Motion*, 116:103071, Jan. 2023.

[34] H. Dorren, E. Muyzert, and R. Snieder. The stability of one-dimensional inverse scattering. *Inverse Problems. An International Journal on the Theory and Practice of Inverse Problems, Inverse Methods and Computerized Inversion of Data*, 10:865–880, 1994.

[35] H. Dorren and R. Snieder. One-dimensional inverse scattering using data contaminated with errors. In H. von Geramb, editor, *Lectures Notes in Physics, Quantum Inversion Theory and Applications*, pages 405–411. Springer-Verlag, Berlin, 1994.

[36] H. Dorren and R. Snieder. The stability of finite dimensional inverse problems. *Inverse Problems. An International Journal on the Theory and Practice of Inverse Problems, Inverse Methods and Computerized Inversion of Data*, 11:889–911, 1995.

[37] H. Dorren and R. Snieder. Stability estimates for inverse problems. In J. Gottlieb and P. DuChateau, editors, *Parameter Identification and Inverse Problems in Hydrology, Geology and Ecology*, pages 213–224. Kluwer academic publishers, Dordrecht, 1996.

[38] H. Dorren and R. Snieder. Error-propagation in nonlinear delay-time tomography. *Geophysical Journal-oxford*, 128:632–638, 1997.

[39] H. Douma, V. I., and R. Snieder. The reciprocity theorem for the scattered field is the progenitor of the generalized optical theorem. *Journal of The Acoustical Society of America*, 129:2765–2771, 2011.

[40] H. Douma and R. Snieder. Correcting for bias due to noise in coda wave interferometry. *Geophysical Journal-oxford*, 164:99–108, 2006.

[41] H. Douma, R. Snieder, and A. Lomax. Ensemble inference in terms of empirical orthogonal functions. *Geophysical Journal-oxford*, 127:363–378, 1996.

[42] J. Douma, E. Niederleithinger, and R. Snieder. Locating events using time reversal and deconvolution: Experimental application and analysis. *Journal of Nondestructive Evaluation*, 34:2, 2015.

[43] J. Douma and R. Snieder. Focusing of elastic waves for microseismic imaging. *Geophysical Journal-oxford*, 200:390–401, 2015.

[44] Y. Fan and R. Snieder. Required source distribution for interferometry of waves and diffusive fields. *Geophysical Journal-oxford*, 179:1232–1244, 2009.

[45] Y. Fan, R. Snieder, E. Slob, J. Hunziker, and J. Singer. Steering and focusing diffusive fields using synthetic aperture. *Europhysics Letters*, 95:34006, 2011.

[46] Y. Fan, R. Snieder, E. Slob, J. Hunziker, J. Singer, J. Sheiman, and M. Rosenquist. Synthetic aperture controlled source electromagnetics. *Geophysical Research Letters*, 37:L13305, 2010.

[47] Y. Fan, R. Snieder, E. Slob, J. Hunziker, J. Singer, J. Sheiman, and M. Rosenquist. Increasing the sensitivity of controlled-source electromagnetics with synthetic aperture. *Geophysics*, 77:E135–E145, 2012.

[48] C. Fleury, R. Snieder, and K. Larner. General representation theorem for perturbed media and application to Green's function retrieval for scattering problems. *Geophysical Journal-oxford*, 183:1648–1662, 2010.

[49] F. Forghani and R. Snieder. Underestimation of body waves and feasibility of surface-wave reconstruction by seismic interferometry. *The Leading Edge*, 29:790–794, 2010.

[50] P. Gabriels, R. Snieder, and G. Nolet. In situ measurements of shear-wave velocity in sediments using higher mode rayleigh waves. *Geophyisical Prospecting*, 35:187–196, 1987.

[51] T. Gipprich, R. Snieder, R. Jibson, and W. Kimman. The role of shear and tensile failure in dynamically triggered landslides. *Geophysical Journal-oxford*, 172:770778, 2008.

[52] S. Godey, F. Deschamps, J. Trampert, and R. Snieder. Thermal and compositional anomalies beneath the North American continent. *Journal of Geophysical Research-space Physics*, 109:doi:10.1029/2002JB002263, 2004.

[53] S. Godey, R. Snieder, A. Villaseñor, and H. Benz. Surface wave tomography of North America and the Caribbean using global and regional broad-band networks: Phase velocity maps and limitations of ray theory. *Geophysical Journal-oxford*, 152:620–632, 2003.

[54] J. Goudswaard, A. ten Kroode, R. Snieder, and A. Verdel. Detection of lateral velocity contrasts by crosswell traveltime tomography. *SIEP Publication 96-5199*, 1996.

[55] J. Goudswaard, A. ten Kroode, R. Snieder, and A. Verdel. Detection of lateral velocity contrasts by crosswell traveltime tomography. *Geophysics*, 63:523–533, 1998.

[56] A. Grêt, R. Snieder, R. Aster, and P. Kyle. Monitoring rapid temporal changes in a volcano with coda wave interferometry. *Geophysical Research Letters*, 32:L06304, 10.1029/2004GL021143, 2005.

[57] A. Grêt, R. Snieder, and U. Özbay. Monitoring in-situ stress changes in a mining environment with coda wave interferometry. *Geophysical Journal-oxford*, 167:504–508, 2006.

[58] A. Grêt, R. Snieder, and J. Scales. Time-lapse monitoring of rock properties with coda wave interferometry. *Journal of Geophysical Research-space Physics*, 111:B03305, doi:10.1029/2004JB003354, 2006.

[59] J. Groenenboom and R. Snieder. Attenuation, dispersion and anisotropy by multiple scattering of transmitted waves through distributions of scatterers. *Journal of The Acoustical Society of America*, 98:3482–3492, 1995.

[60] D. Gubbins and R. Snieder. Dispersion of P waves in subducted lithosphere: Evidence for an eclogite layer. *Journal of Geophysical Research-space Physics*, 96:6321–6333, 1991.

[61] M. Haney, J. Sheiman, R. Snieder, S. Naruk, J. Busch, and W. S. Fault-plane reflections as a diagnostic of pressure differences in reservoirs - South Eugene Island, offshore Louisiana. In *Proceedings of the Conference on "Fault and Top Seals"*, pages O07(1–10). EAEG, Houten, 2004.

[62] M. Haney and R. Snieder. Breakdown of diffusion in 2D due to loops. *Physical Review Letters*, 91:doi:10.1103/PhysRevLett.91.093902, 2003.

[63] M. Haney, R. Snieder, J. Ampuero, and R. Hofmann. Spectral element modeling of fault-plane reflections arising from fluid pressure distributions. *Geophysical Journal-oxford*, 170:933–951, 2007.

[64] M. Haney, R. Snieder, and J. Sheiman. Further thoughts on the stacking response in seismic data processing. *First Break*, 23:35–38, 2005.

[65] M. Haney, R. Snieder, J. Sheiman, and S. Losh. A moving fluid pulse in a fault zone. *Nature*, 437:46, 2005.

[66] M. Haney, K. van Wijk, and R. Snieder. Radiative transfer in layered media and its connection to the O'Doherty-Anstey formula. *Geophysics*, 70:T1–T11, 2005.

[67] S. Hitchman, K. van Wijk, and R. Snieder. Estimating the Green's function using a single channel dual-beam interferometer. *Journal of The Acoustical Society of America*, 144:124–130, 2018.

[68] J. Hunziker, E. Slob, Y. Fan, R. Snieder, and K. Wapenaar. Electromagnetic interferometry in wavenumber and space domains in a layered earth. *Geophysics*, 78:E137–E148, 2013.

[69] J. Hunziker, E. Slob, K. Wapenaar, Y. Fan, and R. Snieder. Time-lapse controlled-source electromagnetics using interferometry. *The Leading Edge*, 30:564–567, 2011.

[70] M. Jaimes and R. Snieder. Spatio-temporal resolution improvement via weighted time-reversal. *Wave Motion. An International Journal Reporting Research on Wave Phenomena*, 106:102803, 2021.

[71] Jaimes, M. and Snieder, R. Illustration of diffusion and equipartitioning as local processes: A numericla study using the scalar radiative transer equation. *J. Acoust. Soc.Am.*, 153:2148–2164, 2023.

[72] H. Jannane, W. Beydoen, E. Crase, D. Cao, Z. Koren, E. Landa, M. Menses, A. Pica, M. Noble, G. Roeth, S. Singh, R. Snieder, A. Tarantola, D. Trezeguet, and M. Xie. Wavelengths of earth structures that can be resolved from seismic reflection data. *Geophysics*, 54:906–910, 1989.

[73] Jayne, J., Wakin, M.B., and Snieder, R. Green's function estimation by seismic interferometry from limited frequency samples. *Signal Processing*, 205:108863, 2023.

[74] X. Jia, A. Baumstein, C. Jing, E. Neumann, and R. Snieder. Subbasalt Marchenko imaging with offshore Brazil field data. *Geophysics*, 86:WC31–WC40, 2021.

[75] X. Jia, A. Guitton, and R. Snieder. A practical implementation of subsalt Marchenko imaging with a Gulf of Mexico data set. *Geophysics*, 83:S409–S419, 2018.

[76] J. Jian, R. Snieder, and N. Nakata. Extracting the response of the Bay Bridge, California, from the application of multichannel deconvolution to earthquake-induced shaking. *Bulletin of the Seismological Society of America*, 110:556–564, 2020.

[77] C. Kanu and R. Snieder. Numerical computation of the sensitivity kernel for monitoring weak changes with multiply scattered acoustic waves. *Geophysical Journal-oxford*, 203:1923–1936, 2015.

[78] C. Kanu and R. Snieder. Time-lapse imaging of a localized weak change with multiply scattered waves using numerical-based senstivity kernels. *Journal of Geophysical Research, Solid Earth*, 119:5595–5605, 2015.

[79] C. Kanu, R. Snieder, and D. O'Connell. Estimation of velocity change using repeating earthquakes with different locations and focal mechanisms. *Journal of Geophysical Research-space Physics*, 118:2905–2914, 2013.

[80] C. Kanu, R. Snieder, and C. Pankow. Time-lapse monitoring of velocity changes in Utah. *Journal of Geophysical Research, Solid Earth*, 119:7209–7225, 2014.

[81] M. Kiraz, R. Snieder, and K. Wapenaar. Focusing waves in an unknown medium without wavefield decomposition. *JASA Express Lett.*, 1:055602, 2021.

[82] A. Knaak, R. Snieder, Y. Fan, and D. Ramirez-Meija. 3D synthetic aperture and steering for controlled source electromagnetics. *The Leading Edge*, 32:972–978, 2013.

[83] A. Knaak, R. Snieder, L. Súilleabháin, Y. Fan, and D. Ramirez-Meija. Optimized 3D synthetic aperture for controlled-source electromagnetics. *Geophysics*, 80:E309–E316, 2015.

[84] M. Kwon and R. Snieder. Uncertainty analysis for the integration of seismic and controlled source electro-magnetic data. *Geophysical Prospecting*, 59:609–626, 2011.

[85] X. Li, C. Sens-Schönfelder, and R. Snieder. Nonlinear elasticity in resonance experiments. *Physical Review B*, 97:144301, 2018.

[86] F. Lin, M. Ritzwoller, and R. Snieder. Eikonal tomography: Surface wave tomography by phase front tracking across a regional broad-band seismic array. *Geophysical Journal-oxford*, 177:1091–1110, 2009.

[87] P. Lognonne, D. Giardini, R. Snieder, T. Spohn, J. Woodhouse, and E. Wielandt. Very broad band seismometers on the surface landers. In D. Mc Cleese at al., editor, *In Mars Surveyor Science Objectives and Measurements Requirements Workshop*, pages 105–106. JPL Tech. Rpt D12017, California Institut of Technology, Pasadena CA, 1994.

[88] A. Lomax and R. Snieder. Finding sets of acceptable solutions with a genetic algorithm with application to surface wave group dispersion in europe. *Geophysical Research Letters*, 21:2617–2620, 1994.

[89] A. Lomax and R. Snieder. The contrast in upper-mantle shear-wave velocity between the east european platform and tectonic europe obtained with genetic algorithm inversion of rayleigh-wave group dispersion. *Geophysical Journal-oxford*, 123:169–182, 1995.

[90] A. Lomax and R. Snieder. Identifying sets of acceptable solutions to non-linear geophysical inverse problems which have complicated misfit functions. *Nonlinear Processes in Geophysics*, 2:222–227, 1995.

[91] A. Lomax and R. Snieder. Estimation of finite-frequency waveforms through wavelength-dependent averaging of velocity. *Geophysical Journal-oxford*, 126:369–381, 1996.

[92] C. MacBeth and R. Snieder. The scattering of high frequency surface waves in scotland. *Journal of Geophysical Research-space Physics*, 94:1795–1802, 1989.

[93] H. Marquering and R. Snieder. Surface-wave mode coupling for efficient forward modelling and inversion of body-wave phases. *Geophysical Journal-oxford*, 120:186–208, 1995.

[94] H. Marquering and R. Snieder. Surface-wave velocity structure beneath europe, the northeastern atlantic and western asia from waveform inversion including surface-wave mode coupling. *Geophysical Journal-oxford*, 127:283–304, 1996.

[95] H. Marquering, R. Snieder, and G. Nolet. Waveform inversions and the significance of surface wave mode coupling. *Geophysical Journal-oxford*, 124:258–278, 1996.

[96] K. Mehta, A. Bakulin, J. Sheiman, R. Calvert, and R. Snieder. Improving the virtual source method by wavefield separation. *Geophysics*, 72:V79–V86, 2007.

[97] K. Mehta, J. Sheiman, R. Snieder, and R. Calvert. Strengthening the virtual-source method for time-lapse monitoring. *Geophysics*, 73:S73–S80, 2008.

[98] K. Mehta and R. Snieder. Time reversed imaging for perturbed media. *American Journal of Physics*, 74:224–231, 2006.

[99] K. Mehta, R. Snieder, R. Calvert, and J. Sheiman. Acquisition geometry requirements for generating virtual-source data. *The Leading Edge*, 27:620–629, 2008.

[100] K. Mehta, R. Snieder, and V. Graizer. Downhole receiver function: A case study. *Bulletin of the Seismological Society of America*, 97:1396–1403, 2007.

[101] K. Mehta, R. Snieder, and V. Graizer. Extraction of near-surface properties for lossy layered medium using propagator matrix. *Geophysical Journal-oxford*, 168:271–280, 2007.

[102] G. Michaud and R. Snieder. Error in shear-wave polarization and time splitting. *Geophysical Prospecting*, 52:123–132, 2004.

[103] T. Mikesell, K. van Wijk, T. Blum, R. Snieder, and H. Sato. Analyzing the coda from correlating scattered surface waves. *Journal of The Acoustical Society of America*, 131:EL275–EL281, 2012.

[104] M. Mirzaei, J. Bredewout, and R. Snieder. Gravity data inversion using the subspace method. In J. Gottlieb and P. DuChateau, editors, *Parameter Identification and Inverse Problems in Hydrology, Geology and Ecology*, pages 187–198. Kluwer academic publishers, Dordrecht, 1996.

[105] C. Mitcham and R. Snieder. Science for sale: Improved ethics education (letter). *Science (New York, N.Y.)*, 343:137, 2014.

[106] M. Miyazawa, R. Snieder, and A. Venkataraman. Application of seismic interferometry to extract P and S wave propagation and observation of shear wave splitting from noise data at Cold Lake, Alberta, Canada. *Geophysics*, 73:D35–D40, 2008.

[107] M. Miyazawa, A. Venkataraman, R. Snieder, and M. Payne. Analysis of microearthquake data at Cold Lake and its applications to reservoir monitoring. *Geophysics*, 73:O15–O21, 2008.

[108] T. Moser and G. N. R. Snieder. Ray bending revisited. *Bulletin of the Seismological Society of America*, 82:259–288, 1992.

[109] E. Muyzert, H. Paulssen, and R. Snieder. A seismic cross section through the east european continent. *Geoph. J Int.*, 136:695–704, 1999.

[110] E. Muyzert and R. Snieder. The influence of errors in the source parameters on phase velocity measurements of surface waves. *Bulletin of the Seismological Society of America*, 86:1863–1872, 1996.

[111] E. Muyzert and R. Snieder. An alternative parameterization for surface waves in a transverse isotropic medium. *Phys. Earth Planet. Int.*, 118:125–133, 2000.

[112] N. Nakata and R. Snieder. Near-surface weakening in Japan after the 2011 Tohoku-Oki earthquake. *Geophysical Research Letters*, 38:L17302, 2011.

[113] N. Nakata and R. Snieder. Estimating near-surface shear-wave velocities in Japan by applying seismic interferometry to KiK-net data. *Journal of Geophysical Research-space Physics*, 117:B01308, 2012.

[114] N. Nakata and R. Snieder. Time-lapse change in anisotropy in Japan's near surface after the 2011 Tohoku-Oki earthquake. *Geophysical Research Letters*, 39:L11313, 2012.

[115] N. Nakata and R. Snieder. Monitoring a building using deconvolution interferometry. II: Ambient-vibration analysis. *Bulletin of the Seismological Society of America*, 104(1):204–213, 2014.

[116] N. Nakata, R. Snieder, and M. Behm. Body-wave interferometry using regional earthquakes with multidimensional deconvolution after wavefield decomposition at free surface. *Geophysical Journal-oxford*, 199:1125–1137, 2014.

[117] N. Nakata, R. Snieder, S. Kuroda, S. Ito, T. Aizawa, and T. Kunimi. Monitoring a building using deconvolution interferometry. I: Earthquake-data analysis. *Bulletin of the Seismological Society of America*, 103:1662–1678, 2013.

[118] N. Nakata, R. Snieder, T. Tsuji, K. Larner, and T. Matsuoka. Shear wave imaging from traffic noise using seismic interferometry by cross-coherence. *Geophysics*, 76:SA97–SA106, 2011.

[119] F. Neele, P. Lognonne, B. Romanowicz, and R. Snieder. Effect of sharp lateral heterogeneity on the Earth'S normal modes. *Geophysical Research Letters*, 16:397–400, 1989.

[120] F. Neele and R. Snieder. Are long-period body wave coda caused by lateral heterogeneity? *Geophysical Journal International*, 107:131–153, 1991.

[121] F. Neele and R. Snieder. Topography of the 400 km discontinuity from observations of long-period P400P phases. *Geophysical Journal-oxford*, 109:670–682, 1992.

[122] F. Neele, J. VanDecar, and R. Snieder. A formalism for including amplitude data in tomographic inversions. *Geophysical Journal-oxford*, 115:482–496, 1993.

[123] F. Neele, J. VanDecar, and R. Snieder. The use of P-wave amplitude data in joint inversions with travel times for upper-mantle velocity structure. *Journal of Geophysical Research-space Physics*, 98:12,033–12,054, 1993.

[124] C. Newton and R. Snieder. Estimating intrinsic attenuation of a building using deconvolution interferometry and time reversal. *Bulletin of the Seismological Society of America*, 102:2200–2208, 2012.

[125] G. Nolet and R. Snieder. Solving large linear inverse problems by projection. *Geophysical Journal-oxford*, 103:565–568, 1990.

[126] C. Pacheco and R. Snieder. Localizing time-lapse changes with multiply scattered waves. *Journal of The Acoustical Society of America*, 118:1300–1310, 2005.

[127] C. Pacheco and R. Snieder. Time-lapse traveltime change of single scattered acoustic waves. *Geophysical Journal-oxford*, 165:485–500, 2006.

[128] M. Passier and R. Snieder. On the presence of intermediate-scale heterogeneity in the upper mantle. *Geophysical Journal-oxford*, 123:817–837, 1995.

[129] M. Passier and R. Snieder. Using differential waveform data to retrieve local S-Velocity structure or path-averaged S-Velocity gradients. *Journal of Geophysical Research-space Physics*, 100:24061–24078, 1995.

[130] M. Passier and R. Snieder. Correlation between shear wave upper mantle structure and tectonic surface expressions: Application to central and southern germany. *Journal of Geophysical Research-space Physics*, 101:25293–25304, 1996.

[131] T. Passier, R. van der Hilst, and R. Snieder. Surface wave waveform inversions for local shear-wave velocities under eastern australia. *Geophysical Research Letters*, 24:1291–1294, 1997.

[132] H. Paulssen, B. Bukchin, A. Emelianov, M. Lazarenko, E. Muyzert, R. Snieder, and T. Yanovskaya. The NARS-DEEP project. *Tectonophysics*, 313:1–8, 1999.

[133] H. Paulssen, A. Levshin, A. Lander, and R. Snieder. Time and frequency dependent polarization analysis: Anomalous surface wave observations in iberia. *Geophysical Journal-oxford*, 103:483–496, 1990.

[134] H. Paulssen, A. Levshin, A. Lander, and R. Snieder. Time and frequency dependent polarization analysis: Anomalous surface wave observations in iberia. In M. J. and E. Carreno, editors, *Iberian Lithosphere and Heterogeneity and Anisotropy*, pages 19–38. Monografia No 10, Instituto Geografico Nacional, Madrid, 1994.

[135] A. Pech, F. Sánchez-Sesma, R. Snieder, F. Ignacio-Caballero, A. Rodríguez-Castellanos, and J. Ortíz-Alemán. Estimate of shear wave velocity and its time-lapse change, from seismic data recorded at the SMNH01 station of KiK-net using seismic interferometry. *Soil Dyn. and Earthquake Eng.*, 39:128–137, 2012.

[136] W. Peltier, D. Rothman, R. Snieder, and A. Sornette. 20th international conference on mathematical geophysics "Complex Space-Time Geophysical Structures". *Nonlinear Processes in Geophysics*, 2:107–108, 1995.

[137] T. Planès, M. Mooney, J. Rittgers, M. Parekh, M. Behm, and R. Snieder. Time-lapse monitoring of internal erosion in earthen dams and levees using ambient seismic noise. *Géotechnique*, 66:301–312, 2016.

[138] T. Planès, R. Snieder, and S. Singh. Model-based redatuming of seismic data: An inverse filter approach. *Geophysics*, 83:Q1–Q13, 2018.

[139] A. Prunty and R. Snieder. Demystifying the memory effect: A geometrical approach to understanding speckle correlations. *Eur. Phys J. Special Topics*, 226:1445–1455, 2017.

[140] A. Prunty and R. Snieder. Theory of the linear sampling method for time-dependent fields. *Inverse Problems. An International Journal on the Theory and Practice of Inverse Problems, Inverse Methods and Computerized Inversion of Data*, 35:055003, 2019.

[141] A. Prunty and R. Snieder. An acoustic Lippmann-Schwinger inversion method: Applications and comparison with the linear sampling method. *Journal of Physics Communications*, 4:015007, 2020.

[142] A. Prunty, R. Snieder, and C. Sens-Schönfelder. Acoustic imaging using unknown random sources. *Journal of The Acoustical Society of America*, 149:499–507, 2021.

[143] J. Pulliam and R. Snieder. Fast, efficient calculation of rays and travel times with ray perturbation theory. *Journal of The Acoustical Society of America*, 99:383–391, 1996.

[144] J. Pulliam and R. Snieder. Ray perturbation theory, dynamic ray tracing and the determination of Fresnel zones. *Geophysical Journal-oxford*, 135:463–469, 1998.

[145] D. Robinson, M. Sambridge, and R. Snieder. Constraints of coda wave interferometry estimates of source separation: The acoustic case. *Exploration Geoph.*, 38:189–199, 2007.

[146] D. Robinson, M. Sambridge, and R. Snieder. A probabilistic approach for estimating the separation between a pair of earthquakes directly from their coda waves. *Journal of Geophysical Research-space Physics*, 116:B04309, 2011.

[147] D. Robinson, M. Sambridge, R. Snieder, and J. Hauser. Relocating a cluster of earthquakes using a single station. *Bulletin of the Seismological Society of America*, 103:3057–3072, 2013.

[148] D. Robinson, R. Snieder, and M. Sambridge. Using coda wave interferometry for estimating the variation in source mechanism between double couple events. *Journal of Geophysical Research-space Physics*, 112:B12302, doi:10.1029/2007JB004925, 2007.

[149] A. Roehm, R. Snieder, S. Goes, and J. Trampert. Thermal structure of continental upper mantle inferred from S-wave velocity and surface heat flow. *Earth Plan. Sci. Lett.*, 181:396–407, 2000.

[150] A. Roehm, J. Trampert, H. Paulssen, and R. Snieder. Bias in reported seismic arrival times deduced from the ISC catalogue. *Geophysical Journal-oxford*, 137:163–174, 1999.

[151] B. Romanowicz and R. Snieder. A new formalism for the effect of lateral heterogeneity on normal modes and surface waves - II: General anisotropic perturbations. *Geophysical Journal of the Royal Astronomical Society*, 93:91–100, 1988.

[152] M. Roth, G. Muller, and R. Snieder. Velocity shift in random media. *Geophysical Journal-oxford*, 115:552–563, 1993.

[153] P. Saengduean, M. Moschetti, and R. Snieder. Inter-source interferometry of seismic body waves: Required conditions and examples. *Pure and Applied Geophysics*, 178:3441–3460, 2021.

[154] P. Saengduean, R. Snieder, and M. B. Wakin. Multi-source wavefield reconstruction combining interferometry and compressive sensing: Application to a linear receiver array. *Geophysical Journal International*, 235(3):2007–2019, Dec. 2023.

[155] M. Sambridge, C. Beghein, F. Simons, and R. Snieder. How do we understand and visualize uncertainty? *The Leading Edge*, 25:542–546, 2006.

[156] M. Sambridge and R. Snieder. Applicability of ray perturbation theory to mantle tomography. *Geophysical Research Letters*, 20:73–76, 1993.

[157] K. Sawazaki, H. Kimura, K. Shioni, N. Uchida, R. Tagaki, and R. Snieder. Depth-dependence of seismic velocity change associated with the 2011 Tohoku earthquake, Japan, revealed from repeating earhquake analysis and finite-difference wave propagation simulation. *Geophysical Journal-oxford*, 201:741–763, 2015.

[158] K. Sawazaki and R. Snieder. Time-lapse changes of P- and S-wave velocities and shear wave splitting in the first year after the 2011 Tohoku earthquake, Japan: Shallow subsurface. *Geophysical Journal-oxford*, 193:238–251, 2013.

[159] J. Scales and R. Snieder. Humility and nonlinearity. *Geophysics*, 62:1355–1358, 1997.

[160] J. Scales and R. Snieder. To bayes or not to bayes? *Geophysics*, 62:1045–1046, 1997.

[161] J. Scales and R. Snieder. Modes of survival. *Geophysics*, 63:1845–1846, 1998.

[162] J. Scales and R. Snieder. What is noise? *Geophysics*, 63:1122–1124, 1998.

[163] J. Scales and R. Snieder. Computers and creativity. *Geophysics*, 64:1347–1348, 1999.

[164] J. Scales and R. Snieder. What is a wave? *Nature*, 401:739–740, 1999.

[165] J. Scales and R. Snieder. The anatomy of inverse problems. *Geophysics*, 65:1708–1710, 2000.

[166] S. Schippkus, R. Snieder, and C. Hadziioannou. Seismic interferometry in the presence of an isolated noise source. *Seismica*, 1(1), 2022.

[167] J. Schneider and R. Snieder. Putting partnership first: A dialogue model for science and risk communication. *GSA today : a publication of the Geological Society of America*, 21(1):36–37, 2011.

[168] C. Sens-Schönfelder, E. Bozdağ, and S. R. Local coupling and conversion of surface waves due to Earth's rotation. Part 2: Numerical examples. *Geophysical Journal-oxford*, 225:176–185, 2021.

[169] C. Sens-Schönfelder, R. Snieder, and X. Li. A model for nonlinear elasticity in rocks based on friction of internal interfaces and contact aging. *Geophysical Journal-oxford*, 216:319–331, 2019.

[170] C. Sens-Schönfelder, R. Snieder, and S. Stähler. The lack of equipartitioning in global body wave coda. *Geophysical Research Letters*, 42:7483–7489, 2015.

[171] S. Singh, S. R., J. van der Neut, J. Thorbecke, E. Slob, and K. Wapenaar. Accounting for free-surface multiples in Marchenko imaging. *Geophysics*, 82:R19–R30, 2017.

[172] S. Singh and R. Snieder. Source-receiver Marchenko redatuming: Obtaining virtual receivers and virtual sources in the subsurface. *Geophysics*, 82:Q13–Q21, 2017.

[173] S. Singh and R. Snieder. Strategies for imaging with Marchenko-retrieved Green's functions. *Geophysics*, 82:Q23–Q37, 2017.

[174] S. Singh, R. Snieder, J. Behura, J. van der Neut, K. Wapenaar, and E. Slob. Marchenko imaging: Imaging with primaries, internal multiples, and free-surface multiples. *Geophysics*, 80:S165–S174, 2015.

[175] E. Slob, R. Snieder, and A. Revil. Retrieving electric resistivity data from self-potential measurements by cross-correlation. *Geophysical Research Letters*, 37:L04308, 2010.

[176] E. Slob, K. Wapenaar, F. Broggini, and R. Snieder. Seismic reflector imaging using internal multiples with Marchenko-type equations. *Geophysics*, 79:S63–S76, 2014.

[177] S. Smith and R. Snieder. Seismic modeling and analysis of a prototype heated nuclear waste storage tunnel, Yucca Mountain, Nevada. *Geophysics*, 75:T1–T8, 2010.

[178] R. Snieder. The origin of the 100,000 year cycle in a simple ice age model. *Journal of Geophysical Research-space Physics*, 90:5661–5664, 1985.

[179] R. Snieder. 3-D linearized scattering of surface waves and a formalism for surface wave holography. *Geophysical Journal of the Royal Astronomical Society*, 84:581–605, 1986.

[180] R. Snieder. The influence of topography on the propagation and scattering of surface waves. *Physics of the Earth and Planetary Interiors*, 44:226–241, 1986.

[181] R. Snieder. Phase speed perturbations and three dimensional scattering effects of surface waves due to topography. *Bulletin of the Seismological Society of America*, 76:1385–1392, 1986.

[182] R. Snieder. On the connection between ray theory and scattering theory for surface waves. In N. Vlaar, G. Nolet, M. Wortel, and S. Cloetingh, editors, *Mathematical Geophysics, a Survey of Recent Developments in Seismology and Geodynamics*, pages 77–83. Reidel, Dordrecht, 1987.

[183] R. Snieder. Surface wave holography. In G. Nolet, editor, *Seismic Tomography, with Applications in Global Seismology and Exploration Geophysics*, pages 323–337. Reidel, Dordrecht, 1987.

[184] R. Snieder. Surface wave scattering theory, with applications to forward and inverse problems in seismology, PhD thesis. *Geologica Ultratraiectina*, 50, 1987.

[185] R. Snieder. Large-scale waveform inversions of surface waves for lateral heterogeneity, 1, theory and numerical examples. *Journal of Geophysical Research-space Physics*, 93:12055–12065, 1988.

[186] R. Snieder. Large-scale waveform inversions of surface waves for lateral heterogeneity, 2, application to surface waves in europe and the mediterranean. *Journal of Geophysical Research-space Physics*, 93:12067–12080, 1988.

[187] R. Snieder. The optical theorem for surface waves and the relation with surface wave attenuation. *Geophysical Journal*, 95:293–302, 1988.

[188] R. Snieder. The S-Velocity under europe and the mediterranean. In G. Nolet and B. Dost, editors, *Proceedings of the Fourth EGT Workshop*, pages 133–138, Strasbourg, 1988. European Science Foundation.

[189] R. Snieder. A perturbative analysis of nonlinear inversion. *Geophysical Journal-oxford*, 101:545–556, 1990.

[190] R. Snieder. The role of the Born-Approximation in nonlinear inversion. *Inverse Problems. An International Journal on the Theory and Practice of Inverse Problems, Inverse Methods and Computerized Inversion of Data*, 6:247–266, 1990.

[191] R. Snieder. An extension of Backus-Gilbert theory to nonlinear inverse problems. *Inverse Problems. An International Journal on the Theory and Practice of Inverse Problems, Inverse Methods and Computerized Inversion of Data*, 7:409–433, 1991.

[192] R. Snieder. Global inversions using normal modes and long-period surface waves. In H. I. K. Hirahara, editor, *Seismic Tomography*, pages 23–63. Prentice-Hall, London, 1993.

[193] R. Snieder. Book review of "Geophysical inverse theory". *Inverse Problems. An International Journal on the Theory and Practice of Inverse Problems, Inverse Methods and Computerized Inversion of Data*, 10:1436–1437, 1994.

[194] R. Snieder. De aarde als zwarte doos. *Oratie, Universiteit Utrecht*, page 14pp., 1994.

[195] R. Snieder. Seismologie, de aarde doorgelicht. *Nederlands Tijdschrift voor Natuurkunde*, 60:5–10, 1994.

[196] R. Snieder. Book review of "Geoelectromagnetic waves". *Inverse Problems. An International Journal on the Theory and Practice of Inverse Problems, Inverse Methods and Computerized Inversion of Data*, 12:811–812, 1996.

[197] R. Snieder. Surface wave inversions on a regional scale. In A. Morelli, E. Boschi, and E. G., editors, *Seismic Modelling of the Earth's Structure*, pages 149–181. Editrice Compositori, Bologna, 1996.

[198] R. Snieder. Book review of "Inverse problems in geophysical applications". *Inverse Problems. An International Journal on the Theory and Practice of Inverse Problems, Inverse Methods and Computerized Inversion of Data*, 13:1664–1665, 1997.

[199] R. Snieder. The evolution of phase fronts and the method of strained coordinates. *Journal of The Acoustical Society of America*, 103:3180–3183, 1998.

[200] R. Snieder. The role of nonlinearity in inverse problems. *Inverse Problems. An International Journal on the Theory and Practice of Inverse Problems, Inverse Methods and Computerized Inversion of Data*, 14:387–404, 1998.

[201] R. Snieder. Imaging and averaging in complex media. In J. Fouque, editor, *Diffuse Waves in Complex Media*, pages 405–454. Kluwer, Dordrecht, 1999.

[202] R. Snieder. The tube worm turns. *Nature*, 406:939, 2000.

[203] R. Snieder. *A Guided Tour of Mathematical Methods for the Physical Sciences.* Cambridge Univ. Press, Cambridge UK, 2001.

[204] R. Snieder. Book review of "Seismic ray theory" by V. Červený. *Episodes*, 25(1):52–53, 2002.

[205] R. Snieder. Coda wave interferometry and the equilibration of energy in elastic media. *Physical Review E: Statistical Physics, Plasmas, Fluids, and Related Interdisciplinary Topics*, 66:046615, 2002.

[206] R. Snieder. General theory of elastic wave scattering. In R. Pike and P. Sabatier, editors, *Scattering and Inverse Scattering in Pure and Applied Science*, chapter 1.7.1, pages 528–542. Academic Press, San Diego, 2002.

[207] R. Snieder. Scattering of surface waves. In R. Pike and P. Sabatier, editors, *Scattering and Inverse Scattering in Pure and Applied Science*, chapter 1.7.3, pages 562–577. Academic Press, San Diego, 2002.

[208] R. Snieder. Time-reversal invariance and the relation between wave chaos and classical chaos. In M. Fink, W. Kuperman, J. Montagner, and A. Tourin, editors, *Imaging of Complex Media with Acoustic and Seismic Waves*, pages 1–15. Springer, Berlin, 2002.

[209] R. Snieder. Coda wave interferometry. In *2004 McGraw-Hill Yearbook of Science & Technology*, pages 54–56. McGraw-Hill, New York, 2004.

[210] R. Snieder. Extracting the Green's function from the correlation of coda waves: A derivation based on stationary phase. *Physical Review E: Statistical Physics, Plasmas, Fluids, and Related Interdisciplinary Topics*, 69:046610, 2004.

[211] R. Snieder. *A Guided Tour of Mathematical Methods for the Physical Sciences.* Cambridge Univ. Press, Cambridge, UK, 2 edition, 2004.

[212] R. Snieder. The coherent backscattering effect for moving scatterers. *Europhysics Letters*, 74:630–636, 2006.

[213] R. Snieder. Retrieving the Green's function of the diffusion equation from the response to a random forcing. *Physical Review E: Statistical Physics, Plasmas, Fluids, and Related Interdisciplinary Topics*, 74:046620, 2006.

[214] R. Snieder. The theory of coda wave interferometry. *Pure and Appl. Geophys.*, 163:455–473, 2006.

[215] R. Snieder. Extracting the Green's function of attenuating heterogeneous acoustic media from uncorrelated waves. *Journal of The Acoustical Society of America*, 121:2637–2643, 2007.

[216] R. Snieder. Incoherent vibrations caused by an earthquake; retrieving the response of a building. *IRIS Newsletter*, pages 3–4, 2007.

[217] R. Snieder. Book review of "Seismic interferometry" by G.T. Schuster. *Journal of The Acoustical Society of America*, 126:3375, 2009.

[218] R. Snieder. Extracting the time-domain building response from random vibrations. In T. Schanz, R. Iankov, T. Schanz, and R. Iankov, editors, *Coupled Site and Soil-Structure Interaction Effects with Application to Seismic Risk Mitigation*, NATO Science for Peace and Security Series - C: Environmental Security, pages 283–292. Springer, 2009.

[219] R. Snieder. Converging research fields need converging communities. *Seismological Research Letters*, 82:477–478, 2011.

[220] R. Snieder. Contribution to the forum on the grand challenge for engineers. *Issues in Science and Technology*, 31(2):24, 2015.

[221] R. Snieder. Imaging the Earth using Green's theorem. In N. Higham, M. Dennis, P. Glendinning, Martin. P.A., F. Santosa, and J. Tanner, editors, *The Princeton Companion to Applied Mathematics*, chapter VII.16, pages 857–860. Princeton Univ. Press, Princeton, NJ, 2015.

[222] R. Snieder. Acceptance speech of the Maurice Ewing Medal for Albert Tarantola. *The Leading Edge*, 37(11):843, 2018.

[223] R. Snieder. How time-discretization can break the asymptotics of inverse scattering. *Proceedings of the Royal Society A*, 479(2275):20230177, July 2023.

[224] R. Snieder and D. Aldridge. Perturbation theory for travel times. *Journal of The Acoustical Society of America*, 98:1565–1569, 1995.

[225] R. Snieder, J. Beckers, and F. Neele. The effect of small-scale structure on normal mode frequencies and global inversions. *Journal of Geophysical Research-space Physics*, 96:501–515, 1991.

[226] R. Snieder and S. Benson. Education for the global energy challenge. *Physics Today*, 61(7):48–49, 2008.

[227] R. Snieder and S. Benson. Help make a difference with education and outreach for the global energy challenge! *The Leading Edge*, 27:1364–1370, 2008.

[228] R. Snieder, V. Cermak, and G. Poupinet. The evolution from a continent, from kinematics to dynamics. *Phys. Earth Plan. Inter.*, 79:1–2, 1993.

[229] R. Snieder and C. Chapman. The reciprocity properties of geometrical spreading. *Geophysical Journal-oxford*, 132:89–95, 1998.

[230] R. Snieder, H. Douma, and I. Vasconcelos. Extracting the Green's function from measurements of the energy flux. *Journal of The Acoustical Society of America*, 131:EL309–EL315, 2012.

[231] R. Snieder, A. Duran, and A. Obermann. Locating velocity changes in elastic media with coda wave interferometry. In N. Nakata, L. Gualtieri, and A. Fichtner, editors, *Seismic Ambient Noise*, chapter 6, pages 188–217. Cambridge University Press, Cambridge, UK, 2019.

[232] R. Snieder, Y. Fan, E. Slob, and K. Wapenaar. Equipartitioning is not sufficient for Green's function extraction. *Earthquake Science*, 23:403–415, 2010.

[233] R. Snieder and S. Fels. The flywheel effect in the middle atmosphere. *Journal of Atmospheric Science*, 45:3996–4004, 1988.

[234] R. Snieder and C. Fleury. Cancellation of spurious arrivals in Green's function retrieval of multiple scattered waves. *Journal of The Acoustical Society of America*, 128:1598–1605, 2010.

[235] R. Snieder, A. Grêt, H. Douma, and J. Scales. Coda wave interferometry for estimating nonlinear behavior in seismic velocity. *Science (New York, N.Y.)*, 295:2253–2255, 2002.

[236] R. Snieder and M. Hagerty. Monitoring change in volcanic interiors using coda wave interferometry: Application to Arenal Volcano, Costa Rica. *Geophysical Research Letters*, 31:L09608, 2004.

[237] R. Snieder, C. Holles, Q. Zhu, and C. James. Teach with heart! *Physics Today*, 76(3):10–11, 2023.

[238] R. Snieder, S. Hubbard, M. Haney, G. Bawden, P. Hatchell, A. Revil, R. Calvert, A. Curtis, M. Fehler, P. Gerstoft, B. Hornby, M. Landrø, D. Lesmes, K. Mehta, M. Mooney, C. Pacheco, S. Prejean, H. Sato, J. Schuster, K. Wapenaar, and M. Wilt. Advanced non-invasive geophysical monitoring techniques. *Ann. Rev. of Earth Planet. Sci.*, 35:653–683, 2007.

[239] R. Snieder and K. Larner. *The Art of Being a Scientist, A Guide for Graduate Students and Their Mentors*. Cambridge University Press, Cambridge, UK, 2009.

[240] R. Snieder, K. Larner, and T. Boyd. Teaching graduate students The Art of Science. In A. Heck, editor, *Organizations, People, and Strategies in Astronomy (I)*, pages 113–134. Venngeist, Duttlenheim, 2012.

[241] R. Snieder and E. Larose. Extracting Earth's elastic wave response from noise measurements. *Ann. Rev. Earth Planet. Sci.*, 41:183–206, 2013.

[242] R. Snieder and A. Lomax. Wavefield smoothing and the effect of rough velocity perturbations on arrival times and amplitudes. *Geophysical Journal-oxford*, 125:796–812, 1996.

[243] R. Snieder, M. Miyazawa, E. Slob, I. Vasconcelos, and K. Wapenaar. A comparison of strategies for seismic interferometry. *Surveys in Geophysics*, 30:503–523, 2009.

[244] R. Snieder and G. Nolet. Linearized scattering of surface waves on a spherical earth. *Journal of Geophysics*, 61:55–63, 1987.

[245] R. Snieder and J. Page. Multiple scattering in evolving media. *Physics Today*, 60(4):49–55, 2007.

[246] R. Snieder and H. Paulssen. Future deployment of the NARS array. In D. Gee and M. Beckholmen, editors, *Proceedings of the Europrobe Symposium Jablonna 1991*, pages 129–132, Warsawa, 1993.

[247] R. Snieder and B. Romanowicz. A new formalism for the effect of lateral heterogeneity on normal modes and surface waves -I: Isotropic perturbations, perturbations of interfaces and gravitational perturbations. *Geophysical Journal of the Royal Astronomical Society*, 92:207–222, 1988.

[248] R. Snieder and E. Şafak. Extracting the building response using seismic interferometry; theory and application to the Millikan Library in Pasadena, California. *Bulletin of the Seismological Society of America*, 96:586–598, 2006.

[249] R. Snieder and M. Sambridge. Ray perturbation theory for travel times and raypaths in 3-D heterogeneous media. *Geophysical Journal-oxford*, 109:294–322, 1992.

[250] R. Snieder and M. Sambridge. The ambiguity in ray perturbation theory. *Journal of Geophysical Research-space Physics*, 98:22021–22034, 1993.

[251] R. Snieder and M. Sambridge. Reply to the comments of Farra, Madariaga, and Virieux. *Journal of Geophysical Research-space Physics*, 99:21969–21970, 1994.

[252] R. Snieder, M. Sambridge, and F. Sanso. Inverse problems in geophysics: Closing the gap between theory and practice. *Inverse Problems. An International Journal on the Theory and Practice of Inverse Problems, Inverse Methods and Computerized Inversion of Data*, 14:369–370, 1998.

[253] R. Snieder, F. Sánchez-Sesma, and K. Wapenaar. Field fluctuations, imaging with backscattered waves, a generalized energy theorem, and the optical theorem. *Siam Journal On Imaging Sciences*, 2:763–776, 2009.

[254] R. Snieder and J. Scales. Time reversed imaging as a diagnostic of wave and particle chaos. *Physical Review E: Statistical Physics, Plasmas, Fluids, and Related Interdisciplinary Topics*, 58:5668–5675, 1998.

[255] R. Snieder and J. Schneider. *The Joy of Science; Seven Principles for Scientists Seeking Happines, Harmony, and Success*. Cambridge Univ. Press, Cambridge, UK, 2016.

[256] R. Snieder and J. Schneider. Are you following the right to-do list? *Physics World*, pages 44–45, Apr. 2017.

[257] R. Snieder and C. Sens-Schönfelder. Seismic interferometry and stationary phase at caustics. *J. Geophy. Res. Solid Earth*, 120:4333–4343, 2015.

[258] R. Snieder and C. Sens-Schönfelder. Local coupling and conversion of surface waves due to Earth's rotation. Part 1: Theory. *Geophysical Journal-oxford*, 225:158–175, 2021.

[259] R. Snieder, C. Sens-Schönfelder, and E. Ruigrok. Elastic-wave propagation and the Coriolis force. *Phys.Today*, 69(12):90–91, 2016.

[260] R. Snieder, C. Sens-Schönfelder, E. Ruigrok, and K. Shiomi. Seismic shear waves as Foucault pendulum. *Geophysical Research Letters*, 43:2576–2581, 2016.

[261] R. Snieder, C. Sens-Schönfelder, and R. Wu. The time dependence of rack healing as a universal relaxation process, a tutorial. *Geophysical Journal-oxford*, 208:1–9, 2017.

[262] R. Snieder, J. Sheiman, and R. Calvert. Equivalence of the virtual source method and wavefield deconvolution in seismic interferometry. *Physical Review E: Statistical Physics, Plasmas, Fluids, and Related Interdisciplinary Topics*, 73:066620, 2006.

[263] R. Snieder, E. Slob, and K. Wapenaar. Lagrangian Green's function extraction, with applications to potential fields, diffusion, and acoustic waves. *New Journal of Physics*, 12:063013, 2010.

[264] R. Snieder and C. Spencer. A unified approach to ray bending, ray perturbation and paraxial ray theories. *Geophysical Journal-oxford*, 115:456–470, 1993.

[265] R. Snieder and C. Spiers. Marketing earth science education. *EOS, Trans. Am. Geophys. Union*, 83:131, 2002.

[266] R. Snieder and A. Tarantola. Imaging of quantum mechanical potentials. *Physical Review A: Atomic, Molecular, and Optical Physics*, 39:3303–3309, 1989.

[267] R. Snieder and J. Trampert. Inverse problems in geophysics. In A. Wirgin, editor, *Wavefield Inversion*, pages 119–190. Springer Verlag, New York, 1999.

[268] R. Snieder and J. Trampert. Linear and nonlinear inverse problems. In A. Dermanis, A. Grün, and F. Sanso, editors, *Geomatic Methods for the Analysis of Data in the Earth Sciences*, pages 93–164. Springer, Berlin, 2000.

[269] R. Snieder and A. van den Beukel. The liquefaction cycle and the role of drainage in liquefaction. *Granular Matter*, 6:1–9, 2004.

[270] R. Snieder and T. van Eck. Earthquake prediction: A political problem? *Geologische Rundschau*, 86:446–463, 1997.

[271] R. Snieder and K. van Wijk. *A Guided Tour of Mathematical Methods for the Physical Sciences*. Cambridge Univ. Press, Cambridge, UK, 3rd edition, 2015.

[272] R. Snieder, K. van Wijk, M. Haney, and R. Calvert. The cancellation of spurious arrivals in Green's function extraction and the generalized optical theorem. *Physical Review E: Statistical Physics, Plasmas, Fluids, and Related Interdisciplinary Topics*, 78:036606, 2008.

[273] R. Snieder and M. Vrijlandt. Constraining relative source locations with coda wave interferometry: Theory and application to earthquake doublets in the Hayward Fault, California. *Journal of Geophysical Research-space Physics*, 110:B04301, 10.1029/2004JB003317, 2005.

[274] R. Snieder and M. Wakin. When Randomness Helps in Undersampling. *SIAM Review*, 64(4):1062–1080, Nov. 2022.

[275] R. Snieder and K. Wapenaar. Imaging with ambient noise. *Physics Today*, 63(9):44–49, 2010.

[276] R. Snieder, K. Wapenaar, and K. Larner. Spurious multiples in seismic interferometry of primaries. *Geophysics*, 71:SI111–SI124, 2006.

[277] R. Snieder, K. Wapenaar, and U. Wegler. Unified Green's function retrieval by cross-correlation; connection with energy principles. *Physical Review E: Statistical Physics, Plasmas, Fluids, and Related Interdisciplinary Topics*, 75:036103, 2007.

[278] R. Snieder, M. Xie, A. Pica, and A. Tarantola. Retrieving both the impedance contrast and the reference velocity with a single waveform criterion; a global strategy for the inversion of seismic reflection data. *Geophysics*, 54:991–1000, 1989.

[279] R. Snieder and T. Young. Facing major challenges in carbon capture and sequestration. *GSA today : a publication of the Geological Society of America*, 19(11):36–37, 2009.

[280] R. Snieder and Q. Zhu. Connecting to the heart: Teaching value-based professional ethics. *Science and Engineering Ethics*, 26:2235–2254, 2020.

[281] Snieder, R. Just be kind. *Science*, 382:338, 2023.

[282] Snieder, R. Love in the Higher-Education Classroom? - FifteenEightyFour — Cambridge University Press, Apr. 2023.

[283] J. Spetzler and R. Snieder. The effect of small-scale heterogeneity on the arrival time of waves. *Geophysical Journal-oxford*, 145:786–796, 2001.

[284] J. Spetzler and R. Snieder. The formation of caustics in two and three dimensional media. *Geophysical Journal-oxford*, 144:175–182, 2001.

[285] J. Spetzler and R. Snieder. The Fresnel volume and transmitted waves. *Geophysics*, 69:653–663, 2004.

[286] J. Spetzler, J. Trampert, and R. Snieder. Are we exceeding the limits of the great circle approximation in global surface wave tomography? *Geophysical Research Letters*, 28:2341–2344, 2001.

[287] J. Spetzler, J. Trampert, and R. Snieder. The effect of scattering in surface wave tomography. *Geophysical Journal-oxford*, 149:755–767, 2002.

[288] D. Thompson and R. Snieder. Seismic anisotropy of a building. *The Leading Edge*, 25:1093, 2006.

[289] J. Trampert and R. Snieder. Model estimations based on truncated expansions: Possible artifacts in seismic tomography. *Science (New York, N.Y.)*, 271:1257–1260, 1996.

[290] J. Tromp and R. Snieder. The reflection and transmission of plane P- and S-waves by a continuously stratified band: A new approach using invariant embedding. *Geophysical Journal*, 96:447–456, 1989.

[291] T. Ulrich, B. Anderson, C. Le Bas, P.-Y. Payan, J. Douma, and R. Snieder. Improving time reversal focusing through deconvolution: 20 questions. *Proc. of Meetings on Acoustics*, 16:045015, 2012.

[292] H. van Avendonk and R. Snieder. A new mechanism for shape induced seismic anisotropy. *Wave Motion. An International Journal Reporting Research on Wave Phenomena*, 20:89–98, 1994.

[293] R. van der Hilst and R. Snieder. Observations and numerical modelling of high-frequency precursors to P-Wave arrivals at station SNZO New Zealand. *Journal of Geophysical Research-space Physics*, 101:8473–8488, 1996.

[294] H. van Heijst, R. Snieder, and R. Nowack. Resolving a low-velocity layer with surface wave data. *Geophysical Journal-oxford*, 118:333–343, 1994.

[295] J. VanDecar and R. Snieder. Obtaining smooth solutions to large linear inverse problems. *Geophysics*, 59:818–829, 1994.

[296] I. Vasconcelos, S. R., and H. Douma. Reciprocity theorems and Green's function retrieval in perturbed acoustic media. *Physical Review E: Statistical Physics, Plasmas, Fluids, and Related Interdisciplinary Topics*, 80:036605, 2009.

[297] I. Vasconcelos and R. Snieder. Interferometry by deconvolution, Part 1 Theory for acoustic waves and numerical examples. *Geophysics*, 73:S115–S128, 2008.

[298] I. Vasconcelos and R. Snieder. Interferometry by deconvolution: Part 2 Theory for elastic waves and application to drill-bit seismic imaging. *Geophysics*, 73:S129–S141, 2008.

[299] I. Vasconcelos, R. Snieder, and B. Hornby. Imaging internal multiples from subsalt VSP data Examples of target-oriented interferometry. *Geophysics*, 73:S157–S168, 2008.

[300] I. Vasconcelos, R. Snieder, P. Sava, T. Taylor, P. Malin, and A. Chavarria. Drill bit noise illuminates the San Andreas Fault. *EOS Trans. Am. Geophys. Union*, 89(38):349, 2008.

[301] D. J. Wald. Alerting the Globe of Consequential Earthquakes. *Perspectives of Earth and Space Scientists*, 4(1):e2022CN000200, 2023.

[302] K. Wapenaar, F. Broggini, and R. Snieder. Creating a virtual source inside a medium from reflection data: Heuristic derivation and stationary phase analysis. *Geophysical Journal-oxford*, 190:1020–1024, 2012.

[303] K. Wapenaar, P. Broggini, E. Slob, and R. Snieder. Three-dimensional single-sided Marchenko inverse scattering, data-driven focusing, Green's function retrieval, and their mutual relations. *Physical Review Letters*, 110:084301, 2013.

[304] K. Wapenaar, D. Draganov, R. Snieder, X. Campman, and A. Verdel. Tutorial on seismic interferometry. Part 1: Basic principles and applications. *Geophysics*, 75:75A195–75A209, 2010.

[305] K. Wapenaar, J. Fokkema, and R. Snieder. Retrieving the Green's function by cross-correlation: A comparison of approaches. *Journal of The Acoustical Society of America*, 118:2783–2786, 2005.

[306] K. Wapenaar, E. Slob, and R. Snieder. Unified Green's function retrieval by cross-correlation. *Physical Review Letters*, 97:234301, 2006.

[307] K. Wapenaar, E. Slob, and R. Snieder. Seismic and electromagnetic controlled-source interferometry in dissipative media. *Geophysical Prospecting*, 56:419–434, 2008.

[308] K. Wapenaar, E. Slob, and R. Snieder. On seismic interferometry, the generalized optical theorem, and the scattering matrix of a point scatterer. *Geophysics*, 75:SA27–SA35, 2010.

[309] K. Wapenaar, E. Slob, R. Snieder, and A. Curtis. Tutorial on seismic interferometry. Part 2: Underlying theory. *Geophysics*, 75:75A211–75A227, 2010.

[310] K. Wapenaar and R. Snieder. Chaos tamed. *Nature*, 447:643, 2007.

[311] K. Wapenaar, R. Snieder, S. de Ridder, and Slob. E. Green's functions representations for Marchenko imaging without up/down decomposition. *Geophysical Journal-oxford*, 227:184–203, 2021.

[312] K. Wapenaar, J. Thorbecke, J. van der Neut, F. Broggini, S. E., and R. Snieder. Marchenko imaging. *Geophysics*, 79:WA39–WA57, 2014.

[313] K. Wapenaar, J. Thorbecke, J. van der Neut, F. Broggini, E. Slob, and R. Snieder. Green's function retrieval from reflection data, in absence of a receiver at the virtual source position. *Journal of The Acoustical Society of America*, 135:2847–2861, 2014.

[314] K. Wapenaar, J. Thorbecke, J. van der Neut, E. Slob, and S. R. Review paper: Virtual sources and their responses, Part II: Data-driven single-sided focusing. *Geophysical Prospecting*, 65:1430–1451, 2017.

[315] K. Wapenaar, J. van der Neut, E. Ruigrok, D. Draganov, J. Hunziker, E. Slob, J. Thorbecke, and R. Snieder. Seismic interferometry by crosscorrelation and by mutidimensional deconvolution: A systematic comparison. *Geophysical Journal-oxford*, 185:1335–1364, 2011.

[316] Wapenaar, K., Dukalski, M., Reinicke, C., and Snieder, R. Propagator and transfer matrices, Marchenko fousing functions and their mutual relations. *Geophysical Journal International*, 235:1403–1419, 2023.

[317] C. Weemstra, R. Snieder, and L. Boschi. On the estimation of attenuation from the ambient seismic field: Inferences from distributions of isotropic point scatterers. *Geophysical Journal-oxford*, 203:1054–1071, 2015.

[318] C. Weemstra, W. Westra, R. Snieder, and L. Boschi. On estimating attenuation from the amplitude of the spectrally whitened ambient seismic field. *Geophysical Journal-oxford*, 197:1770–1788, 2014.

[319] U. Wegler, B.-G. Lühr, R. Snieder, and A. Ratdomopurbo. Increase of shear velocity before the 1998 eruption of Merapi volcano Indonesia. *Geophysical Research Letters*, 33:L09303, doi:10.1029/2006GL025928, 2006.

[320] R. Zhang, R. Snieder, L. Gargab, and A. Seibi. Modeling of seismic wave motion in high rise buildings. *Probabilistic Engineering Mechanics*, 26:520–527, 2011.

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- R. Snieder, Hale, D., P. Sava, and I. Tsvankin, Consortium Project on Seismic Inverse Methods for Complex Structures, $1,805,000 from industrial sponsors, 2013.
- R. Snieder, Hale, D., P. Sava, and I. Tsvankin, Consortium Project on Seismic Inverse Methods for Complex Structures, $1,601,600 from industrial sponsors, 2012.
- R. Snieder, Geophysical application of synthetic aperture techniques to electromagnetic fields, Shell Gamechanger program, $387,674, 2011-2014.
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- R. Snieder, Hale, D., P. Sava, and I. Tsvankin, Consortium Project on Seismic Inverse Methods for Complex Structures, $1,485,000 from industrial sponsors, 2011
- R. Snieder, Hale, D., P. Sava, and I. Tsvankin, Consortium Project on Seismic Inverse Methods for Complex Structures, $1,181,800 from industrial sponsors, 2010.
- O'Connell, D., R. Denlinger, A. Sabin, R. Snieder, W. Feng, L. Block, P Liu, E. Roeloffs, Integration of Noise and Coda Correlation Data into Kinematic and Waveform Inversions With Microearthquake Data for 3D Velocity Structure, Earthquake Locations, and Moment Tensors in Geothermal Reservoirs, $241.971 (CSM), U.S. Department of Energy, 2010-2012.

- R. Snieder, Hale, D., P. Sava, and I. Tsvankin, Consortium Project on Seismic Inverse Methods for Complex Structures, $1,214,400 from industrial sponsors, 2009.
- R. Snieder, Characterization and monitoring of fractures using multi-scattered seismic waves, ConocoPhillips, $200,677, 2009-2013.
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- R. Snieder, R., Stripping the overburden from the seismic and electromagnetic earth response, Shell Gamechanger Program, $323,359, 2008-2011.
- R. Snieder, Energy education for a broad public, Global Climate and Energy Project, Stanford University, $79,416, 2008.
- Snieder, R. and P.E. Malin, Seismic interferometry; validation with the TRex shaker and application to SAFOD, National Science Foundation, $165,958, 2006-2009.
- Snieder, R. and H. Spetzler, Monitoring the subsurface with multiply scattered waves and quasi-static deformation, Department of Energy, $484,745, 2006-2009.
- Snieder, R., Analyzing microseismicity related to production operations, ExxonMobil, $104,988, 2006-2007.
- Sambridge, M. and R. Snieder, Precise location of Earthquakes: combining arrival times with Coda Wave Interferometry, Australian Research Council. AUS$ 337,000, 2006-2008.
- Snieder, R., Virtual source imaging and monitoring of hydrocarbon reservoirs, Shell Gamchanger Program, $392,192, 2005-2008.
- Snieder, R., Dynamic triggering of landslides, National Earthquake Hazard Reduction Program of the USGS, $69,951, 2004.
- Snieder, R., L. Tenorio, E.Haber, M. Ritzwoller, A. Malinverno, CMG training: Summer School of Mathematical Seismology and Uncertainty in Earth Models, National Science Foundation $180,295, 2004.
- Snieder, R., Remote sensing of fault zone properties from seismic data, Shell Research (Game Changer Program), $463,000, 2002-2006.
- Larner, K., M. de Hoop, J. Scales, R. Snieder, and I. Tsvankin, Consortium Project on Seismic Inverse Methods for Complex Structures, $1,000,000/year from industrial sponsors, 2001-2005.
- Scales, J., R. Snieder, and M. Batzle, Hardware acquisition for experimental studies of multiple scattering of elasticwaves in geophysics, NSF (EAR-0111804), $ 38,021, 2001.
- Snieder, R., and J. Scales, Coda Wave Interferometry, NSF (EAR-0106668), $196,842, 2001.
- Snieder, R., and Roy-Chowdhury, In-Situ Measurement of the Shear-Velocity in the Shallow Earth Using a Portable Vibrator, Stichting voor Technische Wetenschappen (STW), kfl 300 (1 PhD student for 4 years), 1998-2002.

- Snieder, R., and J. Montagner, French-Dutch collaboration grant, Netherlands Organisation for Scientific Research (NWO), F.197.15, fl 5050, 1997.
- Snieder, R., R. Klees, and A. Forte, High-resolution combined inverson of seismological and geoid data, Netherlands Organisation for Scientific Research (NWO), 750.297.02, kfl 900 (2 PhD students for 4 years and 1 postdoc for 2 years), 1997-2001.
- Snieder, R., and Roy-Chowdhury, Ray Perturbation Theory and 3D Seismic Migration, Sticht-ing voor Technische Wetenschappen (STW), kfl 300 (1 PhD student for 4 years), 1997-2001.
- Snieder, R., and H. Paulssen, The NARS-DEEP project, NWO, program for aid to the CIS, 47 kfl, 1996.
- Snieder, R., and H. Paulssen, Upgrading seismometers of the the NARS array, Netherlands Organisation for Scientific Research (NWO), kfl 200, 1996.
- Snieder, R., T. Passier, and R. v.d. Hilst, Investigation of the lateral velocity gradients on the Australian continent, NATO, $ 7000, 1995.
- Paulssen, H., and R. Snieder, Mass processing of digital waveforms, AWON, Netherlands Organisation for Scietific Research, kfl 140 (postdoc for 2 years), 1993-1994.
- Snieder, R., and H. Paulssen, The NARS-DEEP project, NWO, program for aid to the CIS, 95 kfl, 1994.
- Pulliam, J., and R. Snieder, Imaging and Inference in Seismic Investigations of Subduction Zones, NSF-NATO Postdoctoral Fellowship in Science and Engineering, $ 36000, 1994.
- Snieder, R., The NARS-DEEP project, AWON, Netherlands Organisation for Scientific Re-search, kfl 160 (graduate student for 4 years), 1993-1997.
- Pulliam, J., and R. Snieder, Inference in Seismological Investigations of Subducting Litho-sphere, NSF Program for Long and Medium-term Research at Foreign Centers of Excellence, Division of International Programs, NSF Grant INT-9205103, $ 36,000, 1993.
- Snieder, R., and H. Paulssen, The NARS-DEEP project, NWO, program for aid to the CIS, 170 kfl, 1992-1993.
- Sambridge, M., and R. Snieder, Nonlinear effects in seismic tomography, British Council, dfl 7000, 1992.
- VanDecar, J.C., and R. Snieder, The high resolution delineation of Earth structure, NSF Program for Long and Medium-term Research at Foreign Centers of Excellence, Division of International Programs, NSF Grant INT-9205103, $ 36,000, 1992.
- Nolet, G., H. Paulssen, and R. Snieder, Hardware investment Nars dataloggers, NWO, 227 kfl, 1991.
- Snieder, R., and M.J.R. Wortel, Detailed structure and dynamics of the upper mantle, , Pionier-program, dfl 2 million, 1991-1996.
- Snieder, R., Nars project, Royal Dutch Shell, 10 kfl, 1989.
- Snieder, R., and A. Tarantola, Nonlinear inversion of seismic waveforms, European Commu-nities, DG XII, 15 kECU, 1988.