# Frederik J Simons

List of Publications by Year
in descending order



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|---|---|---|---|
| 76 papers | 4,180 citations | 117625 34 h-index | 114465 63 g-index |
| 80 all docs | 80 docs citations | 80 times ranked | 3836 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Probabilistic assessment of sea level during the last interglacial stage. Nature, 2009, 462, 863-867. | 27.8 | 626 |
| 2 | Spatiospectral Concentration on a Sphere. SIAM Review, 2006, 48, 504-536. | 9.5 | 285 |
| 3 | Localized spectral analysis on the sphere. Geophysical Journal International, 2005, 162, 655-675. | 2.4 | 223 |
| 4 | The deep structure of the Australian continent from surface wave tomography. Lithos, 1999, 48, 17-43. | 1.4 | 207 |
| 5 | Possible animal-body fossils in pre-Marinoan limestones from South Australia. Nature Geoscience, 2010, 3, 653-659. | 12.9 | 180 |
| 6 | Multimode Rayleigh wave inversion for heterogeneity and azimuthal anisotropy of the Australian upper mantle. Geophysical Journal International, 2002, 151, 738-754. | 2.4 | 172 |
| 7 | Accelerating changes in ice mass within Greenland, and the ice sheetâ€™s sensitivity to atmospheric forcing. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 1934-1939. | 7.1 | 152 |
| 8 | Isostatic response of the Australian lithosphere: Estimation of effective elastic thickness and anisotropy using multitaper spectral analysis. Journal of Geophysical Research, 2000, 105, 19163-19184. | 3.3 | 145 |
| 9 | Spherical Slepian functions and the polar gap in geodesy. Geophysical Journal International, 2006, 166, 1039-1061. | 2.4 | 129 |
| 10 | Minimum-Variance Multitaper Spectral Estimation on the Sphere. Journal of Fourier Analysis and Applications, 2007, 13, 665-692. | 1.0 | 124 |
| 11 | A probabilistic assessment of sea level variations within the last interglacial stage. Geophysical Journal International, 2013, 193, 711-716. | 2.4 | 96 |
| 12 | Spectral estimation on a sphere in geophysics and cosmology. Geophysical Journal International, 2008, 174, 774-807. | 2.4 | 92 |
| 13 | Accelerated West Antarctic ice mass loss continues to outpace East Antarctic gains. Earth and Planetary Science Letters, 2015, 415, 134-141. | 4.4 | 91 |
| 14 | Multiscale adjoint waveform tomography for surface and body waves. Geophysics, 2015, 80, R281-R302. | 2.6 | 91 |
| 15 | Mapping Greenlandâ€™s mass loss in space and time. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 19934-19937. | 7.1 | 87 |
| 16 | Solving or resolving global tomographic models with spherical wavelets, and the scale and sparsity of seismic heterogeneity. Geophysical Journal International, 2011, 187, 969-988. | 2.4 | 83 |
| 17 | Seismic and mechanical anisotropy and the past and present deformation of the Australian lithosphere. Earth and Planetary Science Letters, 2003, 211, 271-286. | 4.4 | 66 |
| 18 | Spatiospectral localization of isostatic coherence anisotropy in Australia and its relation to seismic anisotropy: Implications for lithospheric deformation. Journal of Geophysical Research, 2003, 108, . | 3.3 | 65 |

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|---|---|---|---|
| 19 | Seismic constraints on temperature of the Australian uppermost mantle. Earth and Planetary Science Letters, 2005, 236, 227-237. | 4.4 | 55 |
| 20 | Automatic detection and rapid determination of earthquake magnitude by wavelet multiscale analysis of the primary arrival. Earth and Planetary Science Letters, 2006, 250, 214-223. | 4.4 | 55 |
| 21 | Age-dependent seismic thickness and mechanical strength of the Australian lithosphere. Geophysical Research Letters, 2002, 29, 24-1. | 4.0 | 53 |
| 22 | Coseismic and postseismic deformation of the 2011 Tohokuâ€Oki earthquake constrained by GRACE gravimetry. Geophysical Research Letters, 2012, 39, . | 4.0 | 53 |
| 23 | Ice mass loss in Greenland, the Gulf of Alaska, and the Canadian Archipelago: Seasonal cycles and decadal trends. Geophysical Research Letters, 2016, 43, 3150-3159. | 4.0 | 53 |
| 24 | Slepian Functions and Their Use in Signal Estimation and Spectral Analysis. , 2010, , 891-923. | | 52 |
| 25 | Multiscale adjoint waveform-difference tomography using wavelets. Geophysics, 2014, 79, WA79-WA95. | 2.6 | 49 |
| 26 | Coseismic slip of the 2010 Mw 8.8 Great Maule, Chile, earthquake quantified by the inversion of GRACE observations. Earth and Planetary Science Letters, 2012, 335-336, 167-179. | 4.4 | 48 |
| 27 | Spatiospectral concentration in the Cartesian plane. GEM - International Journal on Geomathematics, 2011, 2, 1-36. | 1.6 | 47 |
| 28 | Quantitative characterization of coal by means of microfocal X-ray computed microtomography (CMT) and color image analysis (CIA). International Journal of Coal Geology, 1997, 34, 69-88. | 5.0 | 46 |
| 29 | Spatiospectral concentration of vector fields on a sphere. Applied and Computational Harmonic Analysis, 2014, 36, 1-22. | 2.2 | 45 |
| 30 | Spatiospectral localization of global geopotential fields from the Gravity Recovery and Climate Experiment (GRACE) reveals the coseismic gravity change owing to the 2004 Sumatraâ€Andaman earthquake. Journal of Geophysical Research, 2008, 113, . | 3.3 | 44 |
| 31 | Double-difference adjoint seismic tomography. Geophysical Journal International, 2016, 206, 1599-1618. | 2.4 | 42 |
| 32 | On the potential of recording earthquakes for global seismic tomography by lowâ€cost autonomous instruments in the oceans. Journal of Geophysical Research, 2009, 114, . | 3.3 | 39 |
| 33 | Seismic monitoring in the oceans by autonomous floats. Nature Communications, 2015, 6, 8027. | 12.8 | 38 |
| 34 | Global seismic tomography with sparsity constraints: Comparison with smoothing and damping regularization. Journal of Geophysical Research: Solid Earth, 2013, 118, 4887-4899. | 3.4 | 35 |
| 35 | Spectral and spatial decomposition of lithospheric magnetic field models using spherical Slepian functions. Geophysical Journal International, 2013, 193, 136-148. | 2.4 | 35 |
| 36 | Imaging the GalÃ¡pagos mantle plume with an unconventional application of floating seismometers. Scientific Reports, 2019, 9, 1326. | 3.3 | 33 |

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|---|---|---|---|
| 37 | The origin of secondary microseism Love waves. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 29504-29511. | 7.1 | 27 |
| 38 | Parametrizing surface wave tomographic models with harmonic spherical splines. Geophysical Journal International, 2008, 174, 617-628. | 2.4 | 26 |
| 39 | Efficient analysis and representation of geophysical processes using localized spherical basis functions. Proceedings of SPIE, 2009, , . | 0.8 | 26 |
| 40 | Highâ€resolution local magnetic field models for the Martian South Pole from Mars Global Surveyor data. Journal of Geophysical Research E: Planets, 2015, 120, 1543-1566. | 3.6 | 24 |
| 41 | Constraints on upper mantle viscosity from the flowâ€induced pressure gradient across the Australian continental keel. Geochemistry, Geophysics, Geosystems, 2010, 11, . | 2.5 | 23 |
| 42 | Wavelets and wavelet-like transforms on the sphere and their application to geophysical data inversion. Proceedings of SPIE, 2011, , . | 0.8 | 23 |
| 43 | Local spectral variability and the origin of the Martian crustal magnetic field. Geophysical Research Letters, 2012, 39, . | 4.0 | 22 |
| 44 | The spherical Slepian basis as a means to obtain spectral consistency between mean sea level and the geoid. Journal of Geodesy, 2012, 86, 609-628. | 3.6 | 22 |
| 45 | A future for drifting seismic networks. Eos, 2006, 87, 305. | 0.1 | 20 |
| 46 | A Suite of Software Analyzes Data on the Sphere. Eos, 2015, 96, . | 0.1 | 18 |
| 47 | Automatic discrimination of underwater acoustic signals generated by teleseismic P-waves: A probabilistic approach. Geophysical Research Letters, 2011, 38, n/a-n/a. | 4.0 | 17 |
| 48 | The exponentiated phase measurement, and objective-function hybridization for adjoint waveform tomography. Geophysical Journal International, 2020, 221, 1145-1164. | 2.4 | 17 |
| 49 | Maximum-likelihood estimation of lithospheric flexural rigidity, initial-loading fraction and load correlation, under isotropy. Geophysical Journal International, 2013, 193, 1300-1342. | 2.4 | 16 |
| 50 | How do we understand and visualize uncertainty?. The Leading Edge, 2006, 25, 542-546. | 0.7 | 15 |
| 51 | A spatiospectral localization approach to estimating potential fields on the surface of a sphere from noisy, incomplete data taken at satellite altitudes. Proceedings of SPIE, 2007, , . | 0.8 | 13 |
| 52 | Determining the Depth of Jupiterâ€™s Great Red Spot with Juno: A Slepian Approach. Astrophysical Journal Letters, 2019, 874, L24. | 8.3 | 13 |
| 53 | Generation of secondary microseism Love waves: effects of bathymetry, 3-D structure and source seasonality. Geophysical Journal International, 2021, 226, 192-219. | 2.4 | 12 |
| 54 | Internal and external potential-field estimation from regional vector data at varying satellite altitude. Geophysical Journal International, 0, , . | 2.4 | 9 |

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| 55 | Multiscale Estimation of Event Arrival Times and Their Uncertainties in Hydroacoustic Records from Autonomous Oceanic Floats. Bulletin of the Seismological Society of America, 2020, 110, 970-997. | 2.3 | 9 |
| 56 | Analysis of seafloor seismograms of the 2003 Tokachiâ€Oki earthquake sequence for earthquake early warning. Geophysical Research Letters, 2008, 35, . | 4.0 | 8 |
| 57 | A general approach to regularizing inverse problems with regional data using Slepian wavelets. Inverse Problems, 2017, 33, 125016. | 2.0 | 8 |
| 58 | A MERMAID Miscellany: Seismoacoustic Signals beyond the P Wave. Seismological Research Letters, 0, , . | 1.9 | 7 |
| 59 | Scalar and Vector Slepian Functions, Spherical Signal Estimation and Spectral Analysis. , 2015, , 2563-2608. | | 7 |
| 60 | Robust surface-wave full-waveform inversion. , 2019, , . | | 6 |
| 61 | Analysis of real vector fields on the sphere using Slepian functions. , 2012, , . | | 5 |
| 62 | On the robustness of estimates of mechanical anisotropy in the continental lithosphere: A North American case study and global reanalysis. Earth and Planetary Science Letters, 2015, 419, 43-51. | 4.4 | 5 |
| 63 | The changing mass of glaciers on the Tibetan Plateau, 2002â€“2016, using time-variable gravity from the GRACE satellite mission. Journal of Geodetic Science, 2018, 8, 83-97. | 1.0 | 5 |
| 64 | Recording earthquakes for tomographic imaging of the mantle beneath the South Pacific by autonomous MERMAID floats. Geophysical Journal International, 2021, 228, 147-170. | 2.4 | 5 |
| 65 | One year of sound recorded by a <scp>mermaid</scp> float in the Pacific: hydroacoustic earthquake signals and infrasonic ambient noise. Geophysical Journal International, 2021, 228, 193-212. | 2.4 | 5 |
| 66 | A spatiospectral localization approach for analyzing and representing vector-valued functions on spherical surfaces. , 2013, , . | | 4 |
| 67 | Mantle Transition Zone Receiver Functions for Bermuda: Automation, Quality Control, and Interpretation. Journal of Geophysical Research: Solid Earth, 2021, 126, e2020JB020177. | 3.4 | 4 |
| 68 | Potential-Field Estimation Using Scalar and Vector Slepian Functions at Satellite Altitude. , 2013, , 1-47. | | 4 |
| 69 | Multi-physics adjoint modeling of Earth structure: combining gravimetric, seismic, and geodynamic inversions. GEM - International Journal on Geomathematics, 2020, 11, 1. | 1.6 | 3 |
| 70 | Instrument Response Removal and the 2020 MLgÂ3.1 Marlboro, New Jersey, Earthquake. Seismological Research Letters, 0, , . | 1.9 | 3 |
| 71 | Twenty-Thousand Leagues Under the Sea- Recording Earthquakes with Autonomous Floats. Acoustics Today, 0, 17, 42. | 1.0 | 2 |
| 72 | Potential-Field Estimation Using Scalar and Vector Slepian Functions at Satellite Altitude. , 2015, , 2003-2055. | | 2 |

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|---|---|---|---|
| 73 | Full-waveform centroid moment tensor inversion of passive seismic data acquired at the reservoir scale. Geophysical Journal International, 2022, 230, 1725-1750. | 2.4 | 2 |
| 74 | Full-waveform adjoint tomography in a multiscale perspective. , 2014, , . | | 1 |
| 75 | Scalar and Vector Slepian Functions, Spherical Signal Estimation and Spectral Analysis. , 2013, , 1-42. | | 1 |
| 76 | Waveform inversion for shear velocity and attenuation via the spectral-element adjoint method. , 2021, , . | | 0 |