Barbara A Romanowicz

List of Publications by Citations

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243 12,011 61 papers citations h-index

259 13,089 ext. citations

7.4 avg, IF

6.84 L-index

100

g-index

#	Paper	IF	Citations
243	Broad plumes rooted at the base of the Earth's mantle beneath major hotspots. <i>Nature</i> , 2015 , 525, 95-9	50.4	468
242	The three-dimensional shear velocity structure of the mantle from the inversion of body, surface and higher-mode waveforms. <i>Geophysical Journal International</i> , 2000 , 143, 709-728	2.6	402
241	Lithospheric layering in the North American craton. <i>Nature</i> , 2010 , 466, 1063-8	50.4	366
240	Global anisotropy and the thickness of continents. <i>Nature</i> , 2003 , 422, 707-11	50.4	352
239	Global mantle shear velocity model developed using nonlinear asymptotic coupling theory. <i>Journal of Geophysical Research</i> , 1996 , 101, 22245-22272		331
238	A three-dimensional radially anisotropic model of shear velocity in the whole mantle. <i>Geophysical Journal International</i> , 2006 , 167, 361-379	2.6	288
237	Whole-mantle radially anisotropic shear velocity structure from spectral-element waveform tomography. <i>Geophysical Journal International</i> , 2014 , 199, 1303-1327	2.6	245
236	Excitation of Earth's continuous free oscillations by atmosphere-ocean-seafloor coupling. <i>Nature</i> , 2004 , 431, 552-6	50.4	222
235	North American lithospheric discontinuity structure imaged by Ps and Sp receiver functions. <i>Journal of Geophysical Research</i> , 2010 , 115,		194
234	Time scales and heterogeneous structure in geodynamic earth models. <i>Science</i> , 1998 , 280, 91-5	33.3	194
233	Cluster analysis of global lower mantle tomography: A new class of structure and implications for chemical heterogeneity. <i>Earth and Planetary Science Letters</i> , 2012 , 357-358, 68-77	5.3	180
232	Inferences on flow at the base of Earth's mantle based on seismic anisotropy. <i>Science</i> , 2004 , 303, 351-3	33.3	180
231	Superplumes from the core-mantle boundary to the lithosphere: implications for heat flux. <i>Science</i> , 2002 , 296, 513-6	33.3	176
230	Mantle Anchor Structure: An argument for bottom up tectonics. <i>Earth and Planetary Science Letters</i> , 2010 , 299, 69-79	5.3	161
229	Viscosity of oceanic asthenosphere inferred from remote triggering of earthquakes. <i>Science</i> , 1998 , 280, 1245-9	33.3	155
228	Comparison of global waveform inversions with and without considering cross-branch modal coupling. <i>Geophysical Journal International</i> , 1995 , 121, 695-709	2.6	154
227	Waveform tomography reveals channeled flow at the base of the oceanic asthenosphere. <i>Science</i> , 2013 , 342, 227-30	33.3	151

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226	A global tomographic model of shear attenuation in the upper mantle. <i>Journal of Geophysical Research</i> , 1995 , 100, 12375-12394		147
225	GLOBALMANTLETOMOGRAPHY: Progress Status in the Past 10 Years. <i>Annual Review of Earth and Planetary Sciences</i> , 2003 , 31, 303-328	15.3	140
224	Toward real-time estimation of regional moment tensors. <i>Bulletin of the Seismological Society of America</i> , 1996 , 86, 1255-1269	2.3	126
223	Inferring upper-mantle structure by full waveform tomography with the spectral element method. <i>Geophysical Journal International</i> , 2011 , 185, 799-831	2.6	125
222	The depth distribution of azimuthal anisotropy in the continental upper mantle. <i>Nature</i> , 2007 , 447, 198-	- 25001 4	125
221	3-D shear wave radially and azimuthally anisotropic velocity model of the North American upper mantle. <i>Geophysical Journal International</i> , 2011 , 184, 1237-1260	2.6	123
220	A Bo-lidDone in the central Chang-Thang platform of Tibet: Evidence from pure path phase velocity measurements of long period Rayleigh waves. <i>Journal of Geophysical Research</i> , 1986 , 91, 6547		120
219	Qtomography of the upper mantle using three-component long-period waveforms. <i>Geophysical Journal International</i> , 2004 , 157, 813-830	2.6	115
218	3D effects of sharp boundaries at the borders of the African and Pacific Superplumes: Observation and modeling. <i>Earth and Planetary Science Letters</i> , 2005 , 233, 137-153	5.3	107
217	Strike-slip earthquakes on quasi-vertical transcurrent faults: Inferences for general scaling relations. <i>Geophysical Research Letters</i> , 1992 , 19, 481-484	4.9	106
216	Multiplet-multiplet coupling due to lateral heterogeneity: asymptotic effects on the amplitude and frequency of the Earth's normal modes. <i>Geophysical Journal International</i> , 1987 , 90, 75-100	2.6	102
215	Importance of crustal corrections in the development of a new global model of radial anisotropy. Journal of Geophysical Research, 2010 , 115,		101
214	GEOSCOPE: A French initiative in long-period three-component global seismic networks. <i>Eos</i> , 1984 , 65, 753	1.5	101
213	Hemispherical transition of seismic attenuation at the top of the earth's inner core. <i>Earth and Planetary Science Letters</i> , 2004 , 228, 243-253	5.3	100
212	On the variation of b-values with earthquake size. <i>Physics of the Earth and Planetary Interiors</i> , 1994 , 87, 55-76	2.3	100
211	Can we resolve 3D density heterogeneity in the lower mantle?. <i>Geophysical Research Letters</i> , 2001 , 28, 1107-1110	4.9	97
210	Seismic Tomography of the Earth's Mantle. Annual Review of Earth and Planetary Sciences, 1991, 19, 77-	9 9 5.3	97
209	A study of the relation between ocean storms and the Earth's hum. <i>Geochemistry, Geophysics, Geosystems</i> , 2006 , 7, n/a-n/a	3.6	92

208	Seismic anisotropy in the D? layer. <i>Geophysical Research Letters</i> , 1995 , 22, 1657-1660	4.9	88
207	Slip of the 2004 Sumatra-Andaman Earthquake from Joint Inversion of Long-Period Global Seismic Waveforms and GPS Static Offsets. <i>Bulletin of the Seismological Society of America</i> , 2007 , 97, S115-S127	2.3	87
206	Constraints on the structure of the Tibet Plateau from pure path phase velocities of Love and Rayleigh waves. <i>Journal of Geophysical Research</i> , 1982 , 87, 6865-6883		86
205	The upper mantle degree 2: Constraints and inferences from global mantle wave attenuation measurements. <i>Journal of Geophysical Research</i> , 1990 , 95, 11051		84
204	Inversion of receiver functions without deconvolution application to the Indian craton. <i>Geophysical Journal International</i> , 2014 , 196, 1025-1033	2.6	82
203	Crust and upper mantle tomography in Tibet using surface waves. <i>Geophysical Research Letters</i> , 1992 , 19, 881-884	4.9	82
202	Anisotropy in inner core attenuation: A new type of data to constrain the nature of the solid core. <i>Geophysical Research Letters</i> , 1996 , 23, 1-4	4.9	81
201	An unsually large ULVZ at the base of the mantle near Hawaii. <i>Earth and Planetary Science Letters</i> , 2012 , 355-356, 213-222	5.3	80
200	Inversion of teleseismic S particle motion for azimuthal anisotropy in the upper mantle: a feasibility study. <i>Geophysical Journal International</i> , 1991 , 106, 421-431	2.6	79
199	The cape mendocino, california, earthquakes of april 1992: subduction at the triple junction. <i>Science</i> , 1993 , 261, 433-8	33-3	78
198	On the resolution of density anomalies in the Earth's mantle using spectral fitting of normal-mode data. <i>Geophysical Journal International</i> , 2002 , 150, 162-179	2.6	76
197	Anisotropy in the Inner Core: Could It Be Due To Low-Order Convection?. <i>Science</i> , 1996 , 274, 963-6	33.3	76
196	Spatiotemporal patterns in the energy release of great earthquakes. <i>Science</i> , 1993 , 260, 1923-6	33.3	71
195	Anisotropy in the center of the inner core. <i>Geophysical Research Letters</i> , 1994 , 21, 1671-1674	4.9	71
194	Constraints on D? structure using PKP(AB-DF), PKP(BC-DF) and PcP-P traveltime data from broad-band records. <i>Geophysical Journal International</i> , 2002 , 149, 599-616	2.6	70
193	Three-dimensional structure at the base of the mantle beneath the central pacific. <i>Science</i> , 1998 , 282, 718-20	33.3	69
192	Anisotropic structures at the base of the Earth's mantle. <i>Nature</i> , 1998 , 393, 564-567	50.4	68
191	Insights into the nature of the transition zone from physically constrained inversion of long-period seismic data. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007 , 104, 9139-44	11.5	68

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190	Lithospheric expression of geological units in central and eastern North America from full waveform tomography. <i>Earth and Planetary Science Letters</i> , 2014 , 402, 176-186	5.3	67
189	Geophysics. The thickness of tectonic plates. <i>Science</i> , 2009 , 324, 474-6	33.3	67
188	Observational evidence for diffracted SV in the shadow of the Earth's core. <i>Geophysical Research Letters</i> , 1989 , 16, 519-522	4.9	67
187	Modelling of coupled normal modes of the Earth: the spectral method. <i>Geophysical Journal International</i> , 1990 , 102, 365-395	2.6	67
186	The effect of D? on PKP(AB D F) travel time residuals and possible implications for inner core structure. <i>Earth and Planetary Science Letters</i> , 2000 , 175, 133-143	5.3	64
185	Three-dimensional radial anisotropic structure of the North American upper mantle from inversion of surface waveform data. <i>Geophysical Journal International</i> , 2007 , 171, 206-222	2.6	63
184	Inner core anisotropy inferred by direct inversion of normal mode spectra. <i>Geophysical Journal International</i> , 1999 , 139, 599-622	2.6	63
183	How Did Early Earth Become Our Modern World?. <i>Annual Review of Earth and Planetary Sciences</i> , 2014 , 42, 151-178	15.3	62
182	Anomalous splitting of free oscillations: A reevaluation of possible interpretations. <i>Journal of Geophysical Research</i> , 2000 , 105, 21559-21578		61
181	3-D upper mantle shear velocity and attenuation from fundamental mode free oscillation data. <i>Geophysical Journal International</i> , 1990 , 101, 61-80	2.6	61
180	Tectonic regionalization without a priori information: A cluster analysis of upper mantle tomography. <i>Earth and Planetary Science Letters</i> , 2011 , 308, 151-160	5.3	59
179	Seismic structure of the upper mantle beneath the United States by three-dimensional inversion of body wave arrival times. <i>Geophysical Journal International</i> , 1979 , 57, 479-506	2.6	59
178	Monitoring of strain release in central and northern California using broadband data. <i>Geophysical Research Letters</i> , 1993 , 20, 1643-1646	4.9	58
177	Measurement and implications of frequency dependence of attenuation. <i>Earth and Planetary Science Letters</i> , 2009 , 282, 285-293	5.3	57
176	Seismic evidence for partial melting at the root of major hot spot plumes. <i>Science</i> , 2017 , 357, 393-397	33.3	56
175	PKP(BC-DF) Travel time residuals and short scale heterogeneity in the deep Earth. <i>Geophysical Research Letters</i> , 1999 , 26, 3169-3172	4.9	56
174	The Spitak (Armenia) earthquake of 7 December 1988: field observations, seismology and tectonics. <i>Nature</i> , 1989 , 339, 675-679	50.4	55
173	Short wavelength topography on the inner-core boundary. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007 , 104, 31-5	11.5	54

172	Layered structure in the upper mantle across North America from joint inversion of long and short period seismic data. <i>Earth and Planetary Science Letters</i> , 2016 , 449, 164-175	5.3	53	
171	Joint inversion for three-dimensional S velocity mantle structure along the Tethyan margin. <i>Journal of Geophysical Research</i> , 2010 , 115,		52	
170	Anisotropy in the deep Earth. <i>Physics of the Earth and Planetary Interiors</i> , 2017 , 269, 58-90	2.3	51	
169	Deformation in the lowermost mantle: From polycrystal plasticity to seismic anisotropy. <i>Earth and Planetary Science Letters</i> , 2011 , 306, 33-45	5.3	50	
168	Using seismic waves to image Earth's internal structure. <i>Nature</i> , 2008 , 451, 266-8	50.4	50	
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166	Towards global earth tomography using the spectral element method: a technique based on source stacking. <i>Geophysical Journal International</i> , 2005 , 162, 541-554	2.6	49	
165	Non-linear crustal corrections in high-resolution regional waveform seismic tomography. <i>Geophysical Journal International</i> , 2007 , 170, 460-467	2.6	48	
164	Constraints on density and shear velocity contrasts at the inner core boundary. <i>Geophysical Journal International</i> , 2004 , 157, 1146-1151	2.6	48	
163	An observation of PKJKP: inferences on inner core shear properties. <i>Science</i> , 2005 , 308, 1453-5	33.3	48	
162	First-order asymptotics for the eigenfrequencies of the Earth and application to the retrieval of large-scale lateral variations of structure. <i>Geophysical Journal International</i> , 1986 , 87, 209-239	2.6	48	
161	On scaling relations for large earthquakes. <i>Bulletin of the Seismological Society of America</i> , 1993 , 83, 12	9 4. 129	748	
160	A new formalism for the effect of lateral heterogeneity on normal modes and surface wavesI: isotropic perturbations, perturbations of interfaces and gravitational perturbations. <i>Geophysical Journal International</i> , 1988 , 92, 207-221	2.6	45	
159	An experiment in the retrieval of depth and source mechanism of large earthquakes using very long-period Rayleigh wave data. <i>Bulletin of the Seismological Society of America</i> , 1984 , 74, 417-437	2.3	45	
158	On the origin of complexity in PKP travel time data. <i>Geodynamic Series</i> , 2003 , 31-44		44	
157	A study of large-scale lateral variations of P velocity in the upper mantle beneath western Europe. <i>Geophysical Journal International</i> , 1980 , 63, 217-232	2.6	44	
156	Observations of changing anisotropy across the southern margin of the African LLSVP. <i>Geophysical Journal International</i> , 2013 , 195, 1184-1195	2.6	42	
155	Rapid Finite-source Analysis and Near-fault Strong Ground Motions: Application to the 2003 Mw 6.5 San Simeon and 2004 Mw 6.0 Parkfield Earthquakes. <i>Seismological Research Letters</i> , 2005 , 76, 40-48	3	42	

154	The one-bit noise correlation: a theory based on the concepts of coherent and incoherent noise. <i>Geophysical Journal International</i> , 2011 , 184, 1397-1414	2.6	41
153	Inferring the thermochemical structure of the upper mantle from seismic data. <i>Geophysical Journal International</i> , 2009 , 179, 1169-1185	2.6	41
152	Imaging 3-D spherical convection models: What can seismic tomography tell us about mantle dynamics?. <i>Geophysical Research Letters</i> , 1997 , 24, 1299-1302	4.9	41
151	Anisotropy in the inner core: relation between P-velocity and attenuation. <i>Physics of the Earth and Planetary Interiors</i> , 1997 , 101, 33-47	2.3	41
150	Attenuation Tomography of the Earth's Mantle: A Review of Current Status. <i>Pure and Applied Geophysics</i> , 1998 , 153, 257-272	2.2	41
149	Moment tensor inversion of long period Rayleigh waves: A new approach. <i>Journal of Geophysical Research</i> , 1982 , 87, 5395-5407		41
148	On the numerical implementation of time-reversal mirrors for tomographic imaging. <i>Geophysical Journal International</i> , 2014 , 196, 1580-1599	2.6	39
147	Rupture processes of large deep-focus earthquakes from inversion of moment rate functions. Journal of Geophysical Research, 1999 , 104, 863-894		39
146	The upper mantle degree two pattern: Constraints from geoscope fundamental spheroidal mode eigenfrequency and attenuation measurements. <i>Geophysical Research Letters</i> , 1987 , 14, 1219-1222	4.9	39
145	Seismological constraints on attenuation in the Earth: A review. <i>Geophysical Monograph Series</i> , 2000 , 161-179	1.1	38
144	A new formalism for the effect of lateral heterogeneity on normal modes and surface waves-II. General anisotropic perturbation. <i>Geophysical Journal International</i> , 1988 , 93, 91-99	2.6	38
143	The COSY Project: verification of global seismic modeling algorithms. <i>Physics of the Earth and Planetary Interiors</i> , 2000 , 119, 3-23	2.3	36
142	Anelastic tomography: a new perspective on upper mantle thermal structure. <i>Earth and Planetary Science Letters</i> , 1994 , 128, 113-121	5.3	36
141	On the measurement of anelastic attenuation using amplitudes of low-frequency surface waves. <i>Physics of the Earth and Planetary Interiors</i> , 1994 , 84, 179-191	2.3	36
140	The French Pilot Experiment OFM-SISMOBS: first scientific results on noise level and event detection. <i>Physics of the Earth and Planetary Interiors</i> , 1994 , 84, 321-336	2.3	35
139	Seismic waveform modeling and surface wave tomography in a three-dimensional Earth: asymptotic and non-asymptotic approaches. <i>Physics of the Earth and Planetary Interiors</i> , 2000 , 119, 37-5	6 ^{2.3}	34
138	The 23 May 1989 MacQuarie Ridge Earthquake: A very broad band analysis. <i>Geophysical Research Letters</i> , 1990 , 17, 993-996	4.9	34
137	Coupling spectral elements and modes in a spherical Earth: an extension to the Bandwichlase. <i>Geophysical Journal International</i> , 2003 , 154, 44-57	2.6	33

136	On moment-length scaling of large strike slip earthquakes and the strength of faults. <i>Geophysical Research Letters</i> , 2002 , 29, 45-1	4.9	33
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132	The GEOSCOPE program: Present status and perspectives. <i>Bulletin of the Seismological Society of America</i> , 1991 , 81, 243-264	2.3	31
131	Synthetic seismic anisotropy models within a slab impinging on the corefhantle boundary. <i>Geophysical Journal International</i> , 2014 , 199, 164-177	2.6	30
130	Seismic waveform modelling in a 3-D Earth using the Born approximation: potential shortcomings and a remedy. <i>Geophysical Journal International</i> , 2009 , 177, 161-178	2.6	29
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128	Multidisciplinary Constraints on the Abundance of Diamond and Eclogite in the Cratonic Lithosphere. <i>Geochemistry, Geophysics, Geosystems</i> , 2018 , 19, 2062-2086	3.6	27
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126	Toward a federation of broadband seismic networks. <i>Eos</i> , 1986 , 67, 541	1.5	27
125	On an improved method to obtain the moment tensor and depth of earthquakes from the amplitude spectrum of Rayleigh waves. <i>Bulletin of the Seismological Society of America</i> , 1983 , 73, 1513-	1526	27
124	Imaging anisotropic layering with Bayesian inversion of multiple data types. <i>Geophysical Journal International</i> , 2016 , 206, 605-629	2.6	27
123	Deep Earth Structure IQ of the Earth from Crust to Core 2007 , 731-774		26
122	Box tomography: localized imaging of remote targets buried in an unknown medium, a step forward for understanding key structures in the deep Earth. <i>Geophysical Journal International</i> , 2017 , 211, 141-163	2.6	25
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120	On the computation of long period seismograms in a 3-D earth using normal mode based approximations. <i>Geophysical Journal International</i> , 2008 , 175, 520-536	2.6	25
119	Test of the innermost inner core models using broadband PKIKP travel time residuals. <i>Geophysical Research Letters</i> , 2007 , 34,	4.9	25

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A LithosphereAsthenosphere Boundary Global Model Derived from Multimode Surface-Wave Tomography and Petrology. <i>Geophysical Monograph Series</i> , 2018 , 111-123	1.1	25
Depth resolution of earthquakes in central Asia by moment tensor inversion of long-period Rayleigh waves: Effects of phase velocity variations across Eurasia and their calibration. <i>Journal of Geophysical Research</i> , 1981 , 86, 5963-5984		24
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A first step toward an oceanic geophysical observatory. <i>Eos</i> , 1994 , 75, 150	1.5	20
Very long-period data from the geoscope network: Preliminary results on great circle averages of fundamental and higher Rayleigh and Love modes. <i>Bulletin of the Seismological Society of America</i> , 1984 , 74, 2221-2243	2.3	20
Deflating the LLSVPs: Bundles of Mantle Thermochemical Plumes Rather Than Thick Stagnant B iles[] <i>Tectonics</i> , 2020 , 39, e2020TC006265	4.3	20
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	Ceochemistry, Geophysics, Geosystems, 2005, 6, n/a-n/a Long-period seismology on Europa: 2. Predicted seismic response. Journal of Geophysical Research, 2006, 111, n/a-n/a Regional geodynamic implications of the MayJuly 1990 earthquake sequence in southern Sudan. Tectonophysics, 1992, 209, 87-103 A Lithosphere Bathenosphere Boundary & Global Model Derived from Multimode Surface-Wave Tomography and Petrology. Geophysical Monograph Series, 2018, 111-123 Depth resolution of earthquakes in central Asia by moment tensor inversion of long-period Rayleigh waves: Effects of phase velocity variations across Eurasia and their calibration. Journal of Geophysical Research, 1981, 86, 5963-5984 The effects of the theoretical formalism and data selection on mantle models derived from waveform tomography. Geophysical Journal International, 1999, 138, 366-380 Finite fault source study of the Great 1994 Deep Bolivia Earthquake. Geophysical Research Letters, 1996, 23, 1589-1592 Reconsideration of the relations between 5 and P Station anomalies in North America. Geophysical Research Letters, 1990, 7, 417-420 Box Tomography: first application to the imaging of upper-mantle shear velocity and radial anisotropy structure beneath the North American continent. Geophysical Journal International, 2018, 213, 1849-1875 Radial profiles of seismic attenuation in the upper mantle based on physical models. Geophysical Journal International, 2008, 175, 116-134 Seismic anisotropy in the Earth's innermost inner core: Testing structural models against mineral physics predictions. Geophysical Research Letters, 2016, 43, 93-100 Degrees 2, 4, 6 inferred from seismic tomography. Geophysical Research Letters, 1993, 20, 631-634 Fast computation of synthetic seismograms within a medium containing remote localized perturbations: a numerical solution to the scattering problem. Geophysical Journal International, 2017, 208, 674-692 MOISE: A pilot experiment towards long term sea-floor geophysical observatories. Earth, Planets and Space, 1998, 50	Long-period seismology on Europa: 2. Predicted seismic response. Journal of Geophysical Research, 2006, 111, n/a-n/a Regional geodynamic implications of the Maylluly 1990 earthquake sequence in southern Sudan. 7ectonophysics, 1992, 209, 87-103 A Lithosphere@sthenosphere Boundary@ Global Model Derived from Multimode Surface-Wave Tomography and Petrology. Geophysical Monograph Series, 2018, 111-123 Depth resolution of earthquakes in central Asia by moment tensor inversion of long-period Rayleigh waves: Effects of phase velocity variations across Eurasia and their calibration. Journal of Geophysical Research, 1981, 86, 5963-5984 The effects of the theoretical formalism and data selection on mantle models derived from waveform tomography. Geophysical Journal International, 1999, 138, 366-380 2.6 Finite fault source study of the Great 1994 Deep Bolivia Earthquake. Geophysical Research Letters, 1996, 23, 1589-1592 Reconsideration of the relations between S and P Station anomalies in North America. Geophysical Research Letters, 1996, 7, 417-420 Box Tomography: first application to the imaging of upper-mantle shear velocity and radial anisotropy structure beneath the North American continent. Geophysical Journal International, 2018, 213, 1849-1875 Radial profiles of seismic attenuation in the upper mantle based on physical models. Geophysical Journal International, 2008, 175, 116-134 Seismic anisotropy in the Earth's innermost inner core: Testing structural models against mineral physics predictions. Geophysical Research Letters, 2016, 43, 93-100 Degrees 2, 4, 6 inferred from seismic tomography. Geophysical Research Letters, 1993, 20, 631-634 4-9 MOISE: A pilot experiment towards long term sea-floor geophysical observatories. Earth, Planets and Space, 1998, 50, 927-937 A first step toward an oceanic geophysical observatory. Eos, 1994, 75, 150 1-5 Very long-period data from the geoscope network: Preliminary results on great circle averages of fundamental and higher Rayleigh and Love modes. Bulletin of th

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98	Tomographic study of upper mantle atttenuation in the Pacific Ocean. <i>Geophysical Research Letters</i> , 1993 , 20, 663-666	4.9	19
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94	Observations of infragravity waves at the ocean-bottom broadband seismic stations Endeavour (KEBB) and Explorer (KXBB). <i>Geochemistry, Geophysics, Geosystems</i> , 2008 , 9, n/a-n/a	3.6	17
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