

Curriculum Vitae, Professor Hans Thybo

Personal Details:

Addresses: Zhejiang Laboratory, China and Int. Lithosphere Centre, Denmark, h.thybo@gmail.com
Degrees: PhD in Geology 1987, Aarhus University (AU), Denmark.
M.Sc. in Geophysics 1982 and B.Sc. in Mathematics and Physics 1979 AU

Employment:

1981: *Visiting scholar*, Technische Hogeschool Delft, The Netherlands.
1982-86: *PhD. student*, Geological Institute, University of Aarhus
1986-2001: *Assist-Assoc. Professor* of Geophysics, Geological Institute, University of Copenhagen
1994: *Visiting Professor* at Stanford University, California.
2001-2017: *Professor* of Geophysics, Geological Institute, University of Copenhagen (UoC)
2016-2021 *Professor*, Centre for Earth Evolution and Dynamics, Univ. of Oslo
2017-2025: *Professor*, Eurasia Institute of Earth Sciences, Istanbul Technical University
2019- : *Honorary Professor*, China University of Geosciences, Wuhan
2022-2025: *Distinguished Professor*, SinoProbe Laboratory, Chinese Academy of Geological Sciences
2026-: *Distinguished Professor*, Zhejiang Deep-time Digital Earth International Research Center

Honours:

1998: *Elected member* of Royal Danish Academy of Sciences and Letters
2004: *Elected Fellow* of Royal Astronomical Society, London
2004: *Elected member* of Academia Europaea (European Academy of Sciences)
2010: *Elected member* of Norwegian Academy of Sciences and Letters
2012: *Elected member* of Danish Academy of Natural Sciences, Board member since 2014
2013-2017: *Overseas Expert* for Chinese Academy of Sciences (CAS)
2014: *Elected Fellow* of Geological Society of America
2016-: *Honorary Editor* of Tectonophysics
2018: *1000 Talents' Award*, China
2024: *Friendship Award*, the highest award to foreigners from the Chinese Government
2025: *Elected member* of the International Core Academy of Sciences and Humanities
2026: *Academic Committee* of the International Core Academy of Sciences and Humanities

Selected International and National Posts:

2002: *Founding member*, European Geosciences Union (EGU)
2002-2007: *President* (seismology) for the EGU (1999-2002 for EGS)
2003-2017: *Vicepresident and Presidium member* of Royal Danish Academy of Sciences and Letters
2004-2008: *Executive board*, Science Committee, Int. Geological Congress 2008
2004-2009: *Institute Chair*, Geological Institute (UoC); *Deputy Chair* (2001-2004)
2004-2008: *External council member*, Science Faculty, University of Oslo
2006-2026: *Danish representative* to ICSU and ISC (International Science Council)
2007-2012: *General Secretary* of European Geosciences Union.
2010-2016: *Initiator and Council Member* of European Plate Observatory System (EPOS)
2010-: *Board member* of International Lithosphere programme (ILP)
2013-: *Panel member*, Albert Einstein Award from World Cultural Council (post Nobel Laureate)
2014-2016: *President*, European Geosciences Union, *Vicepresident* 2013 & 2017
2017-: *Chair*, Inge Lehmann Foundation
2017-2026: *President* International Lithosphere Program (ILP), Since 2026: *Past-President*
2018-25: *Chair*, 12 panels for FCT Res. Council, Portugal, incl. Evaluation of Centres of Excellence,
2019-2023: *Member of Committee for Freedom and Responsibility in Science* for ISC
2019-: *Member, Chair since 2022*, Science committee for DDE (Deep Digital Earth)

Panel member: ERC Starting Grants; GeoPRISMS, NSF (USA); International Continental Drilling Programme (ICDP); VR Sweden; FCT Portugal; FNU Denmark; Geoscience Evaluations and Res. Foundation, Netherlands; DfG, Germany; Russian Science Foundation; SinoProbe, China; Institut Universitaire Francaise; Department assessments, Croatia and Netherlands; European Science Foundation.

PI projects:

PI, co-PI and initiator on ca. 60 international scientific geophysical-tectonic projects, mainly involving seismology, since 1989 on four continents, including most of Europe, Greenland, Siberia, Africa, and North America. Expedition leader to Siberia, East Africa and the ice sheet in Greenland. Leader of acquisition of a comprehensive database of potential fields in Europe in the early 1990's post Wall Europe.

Invited Lectures:

Invited lectures at institutions: Aarhus, Ankara, Beijing (CAS, CAGS, CUGB, SinoProbe), Barcelona, Berkeley, Berlin, Caltech, Chengdu, Dahlian, El Paso, GEOMAR, Guangzhou; Guilin, Hangzhou; The Hague, Hefei, Houston, Istanbul, Karlsruhe, Kiel, Kiev, Kungshan, Laramie WY, Leeds, London, Moscow, Nanjing, Nice, Novosibirsk, Oslo, Ottawa, Potsdam, Princeton, Santa Fe, St. Peterburg, Stanford, Strasbourg, Sun Yat Sen Univ., Zhuhai, Tokyo, Trabzon, UCLA, Uppsala, Utrecht, Vienna, Warsaw, Wuhan, Yale, and Zhejiang University. About 90 invited talks at meetings of the EGU, EGS, EUG, AGU, IGC, AOGS, Deep Seismix, DEEPxx meetings, Big Data symposium in Beijing, EGT, Europrobe, and TopoEurope Symposia.

Editorial activities:

Guest editor of 11 special issues of scientific journals and one book since 1996.

1999-2006: *Editorial board*, Journal of Applied Geophysics
 2000-2016: *Editor in Chief*, Tectonophysics; *Honorary Editor* since 2016
 2003-2017: *Editorial board*, Geophysical Surveys, Geophysical Journal, and eEARTH
 2009-2016: *Associate Editor*, Solid Earth, since 2017 Advisory board, Solid Earth
 2019-: *Associate Editor*, Mediterranean Geoscience Reviews
 2020-: *Editor in Chief*, Earth and Planetary Science Letters (EPSL)

Outreach:

My research has been described in more than 50 articles in Danish newspapers, in four TV programmes, three radio programmes as well as a series of TV and radio news with interviews.

Teaching and supervision:

Supervisor for 29 Assistant Professors and postdocs, 42 PhD. students, 80 M.Sc. theses and 49 B.Sc. theses. Teaching since 1983 in all aspects of geophysics and science philosophy at undergraduate and graduate level; co-director of the Copenhagen Elite PhD School of Geophysics with annual courses taught by internationally distinguished lecturers, attracting students from the whole world.

Research:

Broadly oriented research in seismology, other geophysics, geodynamics and tectonics. Significant contributions to understanding the evolution and structure of the lithosphere by integrated geophysical-tectonic interpretation. Development of seismic methodology to e.g. imaging fine scale heterogeneity in the crust and mantle and the core-mantle boundary. Main results include:

- Detection of Proterozoic collision (Plate tectonics) from seismic reflection data, 1990 & 1997;
- Discovery of the Mid-Lithospheric Discontinuity, 1997;
- Reflection seismic image of the Core-Mantle Boundary, 2002
- Discovery of Magma-Compensated Crustal Thinning in continental rift zones, 2009
- Identification of strong crustal anisotropy in cratons, 2019
- New model for West Antarctica as a back-arc system, not continental lithosphere, 2020
- Discovery of new type of crust without a mafic lower layer in Tibet, 2021
- New model for relation between eclogitisation and topography, 2025
- Discovery that continental subduction explains explosion of life, 2025
- New model for plateau uplift in Anatolia, Tibet and Andes, 2024

Selected biography for Hans Thybo:

266 scientific articles (50 as first author) with review, 81 other publications, 11 special issues of scientific journals/books and ca. 680 abstracts. Editor-in-Chief for ca.180 volumes of *Tectonophysics*.

Google Scholar: 16,530 citations to 379 pub., H=74, i10-index=214, a=H/#active years= 2.0

WoS: 10,449 citations to 226 pub. (44.7 cit./pub.), H=58, a= 1.7, ORCID: 0000-0002-3945-8065

Stars mark key papers related to main discoveries and results, \$/€ marks student/postdoc

- * BABEL Working Group (S.Klemperer,... H. Thybo et al.), 1990. Evidence for early Proterozoic plate tectonics from seismic reflection profiles in the Baltic Shield. *Nature*, 348, 34-38.
- KRISP Working Party (C. Prodehl, J. Mechie, M.A.Khan, P. Maguire, H. Thybo et al.), 1991. Large scale variation in lithospheric structure along and across the Kenya Rift. *Nature*, 354, 223-227.
- * BABEL Working Group (H. Thybo et al.), 1993. Deep seismic reflection / refraction interpretation of crustal structure along BABEL profiles A and B in the southern Baltic Sea. *Geophys. J. Int.* 112, 325-343.
- * Abramovitz, T.\$, Thybo, H., Berthelsen, A., 1997. Proterozoic sutures and terranes in the southeastern Baltic Shield interpreted from BABEL deep seismic data. *Tectonophysics* 270, 259-277.
- * Thybo, H. and Perchuc, E., 1997. The seismic 8° Discontinuity and Partial Melting in Continental Mantle. *Science* 275, 1626-1629.
- Thybo, H., 1997, Geophysical characteristics of the Tornquist Fan area, northwest TESZ: Indication of Late Carboniferous to Early Permian dextral transtension. *Geol. Mag.* 134, 597-606.
- * Thybo, H., Maguire, P., Birt, C.£, and Perchuc, E., 2000. Seismic reflectivity and underplating beneath the Kenya Rift. *Geoph. Res. Lett.*, 27, 2745-2748.
- * Thybo, H., Zhou, S.£, and Perchuc, E. 2000, Intraplate earthquakes and a seismically defined lateral transition in the upper mantle. *Geophys. Res. Lett.*, 27, 3953-3956.
- Thybo, H., 2001, Crustal structure along the EGT profile across the Tornquist Fan interpreted from seismic, gravity and magnetic data, *Tectonophysics*, 334, 155-190.
- *Thybo, H., Nielsen, L.£, and Perchuc, E., 2003, Seismic scattering at the top of the mantle transition zone. *Earth Plan. Sci. Lett.*, 216, 259-269.
- Thybo, H., Ross, A.R.£, and Egorkin, A.V., 2003, Explosion seismic reflections from the Earth's core. *Earth Plan. Sci. Lett.*, 216, 693-702.
- * Thybo, H., 2006, The heterogeneous Upper Mantle Low Velocity Zone, *Tectonophysics*, 416, 53-79.
- * Lyngsie, S.B.\$, Thybo, H., Lang, R., 2007, Rifting and lower crustal reflectivity: A case study of the intra-cratonic Dniepr-Donets rift zone, Ukraine, *J. Geophys. Res.*, 112, B12402, doi:10.1029/2006JB004795.
- * Sandrin, A.\$ and Thybo, H., 2008, Seismic constraints on a large mafic intrusion with implications for the subsidence mechanism of the Danish Basin. *J. Geophys. Res.*, DOI: 10.1029/2007JB005067
- * H. Thybo, and C.A. Nielsen\$, 2009, Magma-compensated crustal thinning in continental rift zones. *Nature*, doi:10.1038/nature07688.
- * Nielsen, C.\$, and Thybo, H., 2009, No Moho uplift below the Baikal Rift Zone: Evidence from a seismic refraction profile across southern Lake Baikal, *J. Geophys. Res.*, doi:10.1029/2008JB005828.
- Anell, I.\$, Thybo, H., Stratford, W., 2010, Relating Cenozoic North Sea sediments to topography in southern Norway: The interplay between tectonics and climate. *EPSL*, 300, 19-32, doi:10.1016/j.epsl.2010.09.009
- * Stratford, W.£ and Thybo, H., 2011, Crustal structure and composition of the Oslo Graben, Norway, *Earth Plan. Sci. Lett.*, 304, 431-442, doi:10.1016/j.epsl.2011.02.021
- Lassen, A.\$ and Thybo, H., 2012, Neoproterozoic and Palaeozoic evolution of SW Scandinavia based on integrated reflection seismic interpretation. *Precam.Res.*, doi:10.1016/j.precamres.2012.01.008.
- Artemieva, I. M. & Thybo, H., 2013, EUNaseis: A seismic model for Moho and crustal structure in Europe, Greenland, and the North Atlantic region. *Tectonophysics*, doi:10.1016/j.tecto.2013.1008.1004.
- * Thybo, H. & Artemieva, I. M., 2013, Moho and magmatic underplating in continental lithosphere. *Tectonophysics*, doi:10.1016/j.tecto.2013.1005.1032.
- Frassetto, A.£ & Thybo, H., 2013, Receiver function analysis of the crust and upper mantle in Fennoscandia - isostatic implications. *EPSL*, 381, 234-246, doi: 10.1016/j.epsl.2013.07.001
- Youssof, M.\$, Thybo, H., Artemieva, I. M., and Levander, A., 2015, Upper mantle structure beneath southern African cratons from seismic finite-frequency P- and S-body wave tomography: *Earth Plan.Sci. Lett.*, 420, 174-186.

- Artemieva, I.M., Thybo, H., Shulgin, A., 2016. Geophysical constraints on geodynamic processes at convergent margins: A global perspective. *Gondwana Research*, 33, 4-23, doi: 10.1016/j.gr.2015.06.010
- Xia, B.Š, H. Thybo, and I.M. Artemieva, 2017. Seismic crustal structure of the North China Craton and surrounding area: Synthesis and analysis. *J. Geophys. Res.*, 122: 5181-5207.
- Artemieva I.M., Thybo H., Jakobsen K.Š, Sørensen N.K.Š, Nielsen L.S.K.Š, 2017. Heat production in granitic rocks: Global analysis based on a new data compilation GRANITE2017. *Earth Science Reviews*, DOI: 10.1016/j.earscirev.2017.07.003.
- * Yang, H.Š, Chemia, C.€, Artemieva, I.M., and Thybo, H., 2017. Control on off-rift magmatism: A case study of the Baikal Rift Zone, *Earth Plan. Sci. Lett.*, **482**, 501-509, doi: 10.1016/j.epsl.2017.11.040
- Shulgin, A.€, Mjelde, R., Faleide, J.I., Høy, T., Flueh, E., Thybo, H., 2018. The crustal structure in the transition zone between the western and eastern Barents Sea. *Geophys.J. Int.* 214, 315-330
- Buntin, S.Š, Malehmir, A., Koyi, H., Hogdahl, K., Malinowski, M., Larsson, S.A., Thybo, H., Juhlin, C., Korja, A., Gorszczyk, A., 2019. Emplacement and 3D geometry of crustal-scale saucer-shaped intrusions in the Fennoscandian Shield. *Nature Sci. Rep.*, 9, 10.1038/s41598-019-46837-x.
- Artemieva, I.M., Thybo, H., Cherepanova, Y.Š, 2019. Isopycnicity of cratonic mantle restricted to kimberlite provinces. *Earth Plan. Sci. Lett.*, 505, 13-19, 10.1016/j.epsl.2018.09.034.
- Kraft, H.A.Š, Thybo, H. (corresponding author), Vinnik, L.P., Oreshin, S., 2019. Crustal Structure in Central-Eastern Greenland From Receiver Functions. *J. Geophys. Res.*, doi:10.1029/2018JB015919.
- Teknik, V.Š, Ghods, A., Thybo, H. and Artemieva, I., 2019. Crustal density structure of the northwestern Iranian Plateau. *Can. J. Earth Sci.* 56, 1347–1365 (2019) dx.doi.org/10.1139/cjes-2018-0232
- Makushkina, A.Š, Tauzin, B., Tkalčić, H., Thybo, H., 2019, The Mantle Transition Zone in Fennoscandia: Enigmatic High Topography Without Deep Mantle Thermal Anomaly. *Geophys. Res. Lett.*, doi: 10.1029/2018gl081742.
- *Thybo, H., Youssof, M.Š, Artemieva, I.M., 2019. Southern Africa crustal anisotropy reveals coupled crust-mantle evolution for over 2 billion years. *Nature Comm.*, 10, 10.1038/s41467-019-13267-2.
- Artemieva I.M. and Thybo H., 2020, Continent size revisited: Geophysical evidence for West Antarctica as a back-arc system. *Earth-Science Rev.*, doi:10.1016/j.earscirev.2020.103106, 18 pp.
- *Wang, G.Š, H. Thybo (corresponding author), and I. M. Artemieva, 2021. No mafic layer in 80 km thick Tibetan crust, *Nature Communications*, 12, doi: 10.1038/s41467-021-21420-z.
- Hans Thybo and 11 co-authorsŠ, 2021. ScanArray—A Broadband Seismological Experiment in the Baltic Shield. *Seismological Research Letters*, doi: <https://doi.org/10.1785/0220210015>
- Artemieva, Irina M., Yang, HaibinŠ, and Thybo, Hans, 2022, Incipient ocean spreading beneath the Arabian shield, *Earth-Science Reviews*, 226, doi: 10.1016/j.earscirev.2022.103955
- Teknik, V.€, Artemieva, I. M., & Thybo, H. 2023. Geodynamics of the central Tethyan belt revisited: Inferences from crustal magnetization in the Anatolia-Caucasus-Black Sea region. *Tectonics*, 42, <https://doi.org/10.1029/2022TC007282>.
- Yang, HB€, Artemieva, IM, Thybo, H., 2023. The Mid-Lithospheric Discontinuity Caused by Channel Flow in Proto-Cratonic Mantle. *J. Geophys. Res.*, doi: 10.1029/2022JB026202.
- Xia, B.€, Artemieva, I.M., Thybo, H., Klempner, S.L., 2023, Strong Variability in the Thermal Structure of Tibetan Lithosphere. *J. Geophys. Res.*, doi: 10.1029/2022JB026213.
- Makushkina, A.Š, Tauzin, B., Miller, M.S., Tkalčić, H., and Thybo, H. (corr. Author), 2024, Opening of the North Atlantic Ocean and the rise of Scandinavian mountains. *Geology*, doi: 10.1130/G52735.1.
- Teknik, V.€, Artemieva, I.M., Thybo, H. (corr. Author), 2024, Limited arc magmatism and seismicity due to extensive mantle wedge serpentinization in the Makran subduction zone, *Earth and Planetary Science Letters*, 645, doi: 10.1016/j.epsl.2024.118950.
- Xia, B.€, Artemieva, I.M. and Thybo (corr. Author), H., 2024, Phanerozoic emergence of global continental collision and onset of massive crustal eclogitization. *Geology*, doi: 10.1130/G52647.1.
- ZP Zhou€, H. Thybo (corr. Author), I.M. Artemieva, 2024 et al., Crustal melting and continent uplift by mafic underplating at convergent boundaries. *Nature Comm.*, doi: 10.1038/s41467-024-53435-7
- Kahraman, M.€, H. Thybo (corr. Author), I. Artemieva, et al., 2024, Northern Scandinavian Mountains Supported by a Low-grade Eclogitic Crustal Keel. *Nature Comm.*, 16, doi: 10.1038/s41467-025-55865-3.
- Wang, G. €, Thybo, H. (corr. author), Artemieva, I.M., 2026. Weak Tibetan mid-lower crust revealed by relocated shallow seismicity. *Earth and Planetary Science Letters* 695, doi:10.1016/j.epsl.2026.120313.