

Mohammad Youssof
Research Assistant
Physics of Ice, Climate and Earth
Physics of Ice, Climate and Earth

Postal address:

Tagensvej 16
2200
København N.
Denmark

Postal address:

Tagensvej 16
2200
København N.

Email: youssof@nbi.ku.dk

Phone: +4535332169, +45 35 33 21 69



Short presentation

My primary focus is on the development of imaging techniques and solving inverse problems. I utilize seismic wave observations to deploy an array of methods, including tomography, receiver function imaging, moment tensor inversion, relocation analysis, and shear wave splitting techniques.

Additionally, I engage in electromagnetic imaging, specifically employing lasers to assess the roughness and topography of surfaces. I have patented a novel optical scanning apparatus designed as a dynamic 3D interferometric surface probe. I am keen to connect with potential collaborators who share similar research interests. If your interests align with mine, please drop me a line.

Recently appointed as an assistant researcher in Klaus Mosegaard's group, where I am currently engaged in an innovative project aimed at refining algorithms to enhance our understanding of Earth's temporal history.

Websites:-

<https://youssof.webs.com>

<https://github.com/MohammadYoussof>

<https://gitlab.com/mohammadyoussof>

Publications

Three-Dimensional Dynamic Interferometric Surface Probe

Youssof, Mohammad, 30 Apr 2024, (Accepted/In press) 46 p. United States Patent and Trademark Office (USPTO) .

Coupled Crust-Mantle Evolution for > 2 Gy in Southern Africa from Exceptionally Strong Crustal Anisotropy

Thybo, H., Youssof, Mohammad & Artemieva, I. M., 27 Nov 2021, In: Acta Geologica Sinica - English Edition. 95, 1, p. 44-47 4 p.

Coupled Crust-Mantle Evolution for > 2 Gy in Southern Africa from Exceptionally Strong Crustal Anisotropy

Thybo, H., Youssof, Mohammad & Artemieva, I. M., 27 Nov 2021, In: Acta Geologica Sinica (English Edition). 95, 1, p. 44-47 5 p.

Non-Volcanic Earthquake Swarm Near the Harrat Lunayyir Volcanic Field, Saudi Arabia

Youssof, Mohammad, Mai, P. M., Nobile, A. & Jónsson, S., 21 May 2020, (Accepted/In press) In: Journal of Geophysical Research: Solid Earth.

Post-diking deformation in Harrat Lunayyir (Saudi Arabia) from InSAR

Nobile, A., Cao, Y., Youssof, Mohammad, Tripanera, D., Passarelli, L. & Jónsson, S., 1 May 2020, In: EGU General Assembly 2020. 22, p. 8272 2 p.

Southern Africa crustal anisotropy reveals coupled crust-mantle evolution for over 2 billion years

Thybo, H., Youssof, Mohammad & Artemieva, I., 29 Nov 2019, In: Nature Communications. 10, 1, p. 1 10 p., 5445.

Are recent seismic swarms around Harrat Lunayyir (Saudi Arabia) associated with magmatic intrusions?

Nobile, A., Youssof, Mohammad, Tripanera, D., Zaharan, H. M., Mai, M. & Jónsson, S., 1 Apr 2019, 1 p. Copernicus/EGU.

T23D-0390: Interdisciplinary Earthquake Hazard Research in Gulf of Aqaba and strait of Tiran (GAST)

Jónsson, S., Avsar, U., Bektas, Z., Castro-Perdomo, N., Gabriel, A., Hanafy, S., Klinger, Y., Lefevre, M., Mai, P. M., Masson, F., Matrau, R., Passone, L., Pons-Branchu, E., Ribot, M., Ulrich, T., Viltres, R., Wollherr, S. & Youssef, Mohammad, 1 Apr 2019, 1 p. Washinton D.C. USA : Copernicus/EGU.

Interdisciplinary Earthquake Hazard Research in Gulf of Aqaba and Strait of Tiran (GAST)

Jonsson, S., Avsar, U., Bektas, Z., Castro-Perdomo, N., Gabriel, A. A., Hanafy, S., Klinger, Y., Lefevre, M., Mai, P. M., Masson, F., Passone, L., Pons-Branchu, E., Ribot, M., Ulrich, T., Wollherr, S. & Youssef, Mohammad, 1 Dec 2018, In: American Geophysical Union, Fall Meeting 2018. 23

Earthquake swarm in non-volcanic areas of western Saudi Arabia: comparison of observations and imaging

Youssef, Mohammad, Mai, P. M., Parisi, L., Tang, Z., Zahran, H. M., El-Hadidy, S. Y., Sami, M., Hosny, A., Al-Raddadi, W. & El-Hadidy, M. S., 1 Apr 2018, In: 20th EGU General Assembly, EGU2018, Proceedings from the conference held 4-13 April, 2018 in Vienna, Austria. 20, p. 16036

Chemical composition of the continental crust: Insights from a quantitative interpretation of the Vp/Vs ratio

Guerri, M., Youssef, Mohammad & Fullea, J., 1 Dec 2017, In: American Geophysical Union, Fall Meeting 2017. 11

Earthquake swarm in the non-volcanic area north of Harrat Lunayyir, western Saudi Arabia: observations and imaging

Youssef, Mohammad, Mai, P. M., Parisi, L., Tang, Z., Zahran, H. M., El-Hadidy, S. Y., Al-Raddadi, W., Sami, M. & El-Hadidy, M. S. Y., 1 Dec 2017, In: American Geophysical Union, Fall Meeting 2017. 53

Application Of Receiver Based Techniques To Image Crustal Structures Of Scandinavia

Makushkina, A., Youssef, Mohammad, Tkalcic, H., Vinnik, L. P. & Thybo, H., 1 Dec 2016, In: American Geophysical Union, Fall Meeting 2016. 41

P-wave receiver function study of crustal structure in Scandinavia

Makushkina, A., Thybo, H., Vinnik, L. & Youssef, Mohammad, 1 Apr 2016, In: EGU General Assembly 2016, held 17-22 April, 2016 in Vienna Austria. 18

Seismic imaging beneath southwest Africa based on finite-frequency body wave tomography

Youssef, Mohammad, Yuan, X., Tilmann, F., Heit, B., Weber, M., Jokat, W., Geissler, W. & Laske, G., 1 Apr 2016, In: EGU General Assembly 2016, held 17-22 April, 2016 in Vienna Austria. 18

Crustal and upper mantle seismic structure of Russia from teleseismic receiver functions

Youssef, Mohammad, Thybo, H., Artemieva, I. & Vinnik, L., 2016, In: Geophysical Research Abstracts. 18, 1 p., EGU2016-16341.

Thickness and composition of the crust in southern Africa.

Youssef, Mohammad, Thybo, H. & Artemieva, I., 2016, *35th Int. Geological Congress*. 1 p. 4422

Velocity Structures underneath NRIL seismic station, Russia: Imaging the difference between the Siberian Craton and the West Siberian Basin

Youssef, Mohammad, Thybo, H., Artemieva, I. & Vinnik, L., 2016, *Eos Trans. AGU*. AGU, Vol. 96. p. 1 199453

Crustal and upper mantle structure of Siberia from teleseismic receiver functions

Youssef, Mohammad, Thybo, H., Artemieva, I., Vinnik, L. & Oreshin, S., Apr 2015, In: Geophysical Research Abstracts. 17, 1 p., 6035.

Strong crustal seismic anisotropy in the Kalahari Craton based on Receiver Functions

Thybo, H., Youssef, Mohammad & Artemieva, I., Apr 2015, In: Geophysical Research Abstracts. 17, 1 p., 8916.

Upper mantle seismic structure beneath southwest Africa from finite-frequency P- and S-wave tomography

Youssof, Mohammad, Yuan, X., Tilmann, F., Heit, B., Weber, M., Jokat, W., Geissler, W., Laske, G., Eken, T. & Lushetile, B., Apr 2015, In: Geophysical Research Abstracts. 17, 1 p., 13898.

Upper mantle structure beneath southern African cratons from seismic finite-frequency P- and S-body wave tomography

Youssof, Mohammad, Thybo, H., Artemieva, I. M. & Levander, A., 2015, In: Earth and Planetary Science Letters. 420, p. 174-186 13 p.

Strong seismic anisotropy in the crust of southern African cratons

Thybo, H., Youssof, Mohammad & Artemieva, I., Dec 2014, In: EOS Trans. AGU. S23E-04.

Teleseismic receiver functions imaging of Siberia

Youssof, Mohammad, Thybo, H. & Artemieva, I., Dec 2014, In: TRANSACTIONS-AMERICAN GEOPHYSICAL UNION. 94 , 1 p., S51B-4462.

EVOLUTION OF SOUTHERN AFRICAN CRATONS BASED ON SEISMIC IMAGING

Thybo, H., Youssof, Mohammad & Artemieva, I., Oct 2014, In: Geological Society of America. Abstracts with Programs. 46 , 6, p. 43-43

Seismic Structure of Southern African Cratons: A study based on teleseismic receiver functions and finite-frequency tomography

Youssof, Mohammad, Artemieva, I., Levander, A. & Thybo, H., Apr 2014, In: Geophysical Research Abstracts. 16, 1 p., 10884.

Moho depth and crustal composition in Southern Africa

Youssof, Mohammad, Thybo, H., Artemieva, I. & Levander, A., 2013, In: Tectonophysics. 609, p. 267-287 21 p.

Seismic imaging of Southern African cratons: based on teleseismic receiver function and finite-frequency tomography

Youssof, Mohammad, 2013, Department of Geosciences and Natural Resource Management, Faculty of Science, University of Copenhagen. 130 p.

Seismic structure of the crust and lithospheric mantle of the southern African cratonic region

Youssof, Mohammad, Thybo, H., Artemieva, I. & Levander, A., 2013, In: TRANSACTIONS-AMERICAN GEOPHYSICAL UNION. 94

Seismic velocity structure and anisotropy in southern African lithosphere terranes

Youssof, Mohammad, Thybo, H., Levander, A. & Artemieva, I., 2013, In: Geophysical Research Abstracts. 15, 1 p.

Investigating the translation of Earth's inner core

Day, E. A., Cormier, V. F., Geballe, Z. M., Youssof, Mohammad & Yue, H., Dec 2012, In: Eos Trans. AGU, Fall Meet. Suppl.. 93, 52, D133A-2423.

The crust and mantle beneath the Siberian provinces: a preliminary model based on new receiver function analysis

Youssof, Mohammad, Artemieva, I., Thybo, H. & Frassetto, A., Apr 2012, In: Geophysical Research Letters. 14, EGU2012-8870.

High-resolution imaging of the Kaapvaal Craton using P and S wave receiver functions and P- and S- finite frequency tomography

Youssof, Mohammad, Thybo, H., Levander, A. & Artemieva, I., 2012, In: TRANSACTIONS-AMERICAN GEOPHYSICAL UNION. 93, 1 p., 1492831, T23C-2680.

Why is the Kaapvaal different from other cratons?

Youssof, Mohammad, Thybo, H., Levander, A. & Artemieva, I., 2012, In: Geophysical Research Abstracts. 14, 1 p.

Combined teleseismic imaging of the structure of southern African cratons using P-receiver functions and P-and S-finite-frequency tomography

Youssof, Mohammad, Thybo, H., Levander, A., Yuan, X. & Bezada, M., Dec 2011, In: Eos Trans. AGU, Fall Meet. Suppl.. 92, 51, T32A-06.

Structure and extent of the southern African cratons: Integrated images from receiver functions and teleseismic tomography.

Youssof, Mohammad, Levander, A., Bezada, M. & Thybo, H., Apr 2011, In: Geophysical Research Abstracts. 13, EGU2011-5071.

The extent of the Cratonic keel underneath the Southern African region: A 3D image using Finite-Frequency Tomography

Youssof, Mohammad, Bezada, M., Thybo, H. & Levander, A., Dec 2010, In: Eos Trans. AGU, Fall Meet. Suppl.. 91, 51, DI21A-1950.

PdS and SdP Receiver Functions Image of the Lithosphere underneath the Southern African Regions

Youssof, Mohammad, Thybo, H., Levander, A. & Yuan, X., 2009, In: Eos Trans. AGU, Fall Meet. Suppl.. 90, 52, DI13A-1646.