

# HRVOJE TKALČIĆ

RESEARCH SCHOOL OF EARTH SCIENCES  
 THE AUSTRALIAN NATIONAL UNIVERSITY  
 CANBERRA, ACT 0200, AUSTRALIA  
 TEL: +61-2-6125-3213 • E-MAIL: HRVOJE.TKALCIC@ANU.EDU.AU  
 HTTP://RSES.ANU.EDU.AU/~HRVOJE

## ACADEMIC QUALIFICATIONS

---

- |                 |                                                                                                                                                                                                                   |                   |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 1997/01-2001/12 | <i>Ph.D. in Geophysics</i> , December 2001<br>Thesis topic: Study of deep Earth structure using body waves<br>Research Advisor: Professor Barbara Romanowicz<br>UNIVERSITY OF CALIFORNIA AT BERKELEY              | BERKELEY, CA, USA |
| 1989/09-1996/12 | <i>Diploma of Engineering in Physics (~M.Sc. Physics)</i> , December 1996<br><i>Specialty in Geophysics with Meteorology</i><br>Faculty of Science / Geophysical Institute A. Mohorovičić<br>UNIVERSITY OF ZAGREB | ZAGREB, CROATIA   |

## ACADEMIC EMPLOYMENT HISTORY

---

- |                 |                                                                                                                                                     |                     |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 2017/01–present | <i>Head of Seismology and Mathematical Geophysics</i>                                                                                               | CANBERRA, AUSTRALIA |
| 2013/04–present | <i>Associate Professor</i><br>THE AUSTRALIAN NATIONAL UNIVERSITY<br>Research School of Earth Sciences                                               | CANBERRA, AUSTRALIA |
| 2007/01-2013/04 | <i>Fellow in Seismology</i><br>THE AUSTRALIAN NATIONAL UNIVERSITY<br>Research School of Earth Sciences                                              | CANBERRA, AUSTRALIA |
| 2006/01-2007/01 | <i>Research Geophysicist</i> (permanent appointment)<br>MULTIMAX, INC.<br>Geophysics Group                                                          | EMERYVILLE, CA, USA |
| 2003/02-2006/01 | <i>Postdoctoral Research Staff Member</i><br>LAWRENCE LIVERMORE NATIONAL LABORATORY<br>Earth Science Division / Seismology Group                    | LIVERMORE, CA, USA  |
| 2002/04-2003/02 | <i>Postdoctoral Research Fellow</i><br>UNIVERSITY OF CALIFORNIA SAN DIEGO<br>Institute of Geophysics and Planetary Physics / SCRIPPS                | LA JOLLA, CA, USA   |
| 2001/12-2002/04 | <i>Postdoctoral Research Fellow</i><br>UNIVERSITY OF CALIFORNIA AT BERKELEY<br>Seismological Laboratory / Department of Earth and Planetary Science | BERKELEY, CA, USA   |

**ACADEMIC HONOURS**

---

2016	Excellence in Research Award by AuScope
2013	Offer of tenured faculty position at School of Earth and Space Exploration, Arizona State University
2010/11	Fellow of the <i>Japan Society for the Promotion of Science</i> (JSPS); Invitation Fellowship for lecturing and research in Japan
2002	Outstanding Student Paper Award by <i>American Geophysical Union</i> (Tectonophysics Section)
1997	The <i>Perry Byerly</i> Graduate Fellowship in Seismology, UC Berkeley
1987-1991	Government scholarship in Physics for outstanding natural sciences students (former Yugoslavia and Croatia)

**PROFESSIONAL SOCIETY MEMBERSHIPS**

---

1997-present	American Geophysical Union – member since 1997
2006-present	Seismological Society of America – member since 2006

**EXTERNAL BOARDS / COMMITTEES / CONSULTANCIES**

---

2018-	College of Experts (ARC) nominee
2018-	Panel of Specialists consultancy service provider for Geoscience Australia
2018-2020	Keiiti Aki Young Scientist Award Committee (American Geophysical Union)
2017-	Scientific Reports (Nature Publishing Group) - Editorial Board
2015-2019	Study of Earth's Deep Interior (SEDI/IUGG) - Executive Committee
2014-	Physics of Earth and Planetary Interiors - Editorial Board
2010	Member of AAS <i>Theo Murphy High Flyers Think Tank</i> on “Searching the Deep Earth: The Future of Australian Resource Discovery and Utilisation”
2009-present	ANU PhB Examiners Committee

**TEACHING**

---

2017-present	Lecturer for EMSC8019 at ANU (Masters level Advanced Earth physics; 6 units; lecturing 2 out of 12 weeks of the course)
2017	Lecturer for EMSC3050 at ANU (Special Topics; 6 units)
2007-present	Lecturer (and course coordinator since 2010) for “Physics of the Earth” PHYS3070 at ANU (6 units; lecturing 50% of course)
2007-present	Lecturer for ASC (6 units) and ASE (add-ons); a complete list of students provided under “Supervised students” section
2007-2010	Lecturer for EMSC8002 at ANU (Master level seismology; 6 units; lecturing 2 out of 12 weeks of the course)

- 2009-2010 Participating lecturer for EMSC2018 at ANU (undergraduate level geophysics; 6 units; lecturing 2 out of 12 weeks of the course)
- 2001 Teaching Assistant for "Introduction to Geology", an undergraduate field trip course at the UC Berkeley Department of Earth and Planetary Science
- 2000 Principal Graduate Student Instructor for the course "Planets" ASTRO/GEO 12 at the UC Berkeley (~500 students) offered by the Astronomy and Earth and Planetary Science Departments
- 1998-1999 Teaching Assistant for "Introduction to Geology" undergraduate field trips at UC Berkeley offered by the Department of Geology and Geophysics
- 1998 Spoke at the orientation and teaching conference for international student instructors, sponsored by GSI Teaching and Resource Center at UC Berkeley
- 1997 Teaching Assistant for the undergraduate course "Earthquakes" offered by the UC Berkeley Department of Geology and Geophysics
- 1995-1996 Taught physics at "Center Vinko Bek", High School for the Blind in Zagreb, Croatia

**SERVICE TO THE SCHOOL, COLLEGE OR UNIVERSITY (FROM 2007)**

---

- 2017-present The *RSES Experience Portfolio Committee* member
- 2007-present Academic Manager of *Warramunga Seismic and Infrasonic Array Facility* (WRA), NT, Australia, operated on behalf of the Australian Government and United Nations
- 2010-2011 RSES HDR (international PhD applications) committee
- 2010-2013 ANU seismic recorder development steering committee
- 2009-present ANU *Bachelor of Philosophy Degree* coordinator for Earth and Marine Sciences
- 2009-present ANU PhB Examiners Committee
- 2008-present Initiator and coordinator of weekly seminar series: *Earthquake of the Week* in Seismology and Mathematical Geophysics occasionally attended by other RSES staff (attendance over 100 after the catastrophic 2011 Tohoku earthquake). This seminar is a key to developing students and ECRs.
- 2007-2017 Coordinator of seismic data management (processing, archiving and acquisition) in Seismology and Mathematical Geophysics Group
- 2007-present Chair/member of RSES appointment committees for academic and technical staff
- 2007-present Participated in ten field campaigns in remote areas of Australia (Tasmania, Western Australia, South Australia, Northern Territory and New South Wales) funded by AuScope and the ARC with the goal of providing subsurface images of Australia to better understand dynamics and evolution of the Australian continent and plate.

**SERVICE TO THE DISCIPLINE**

---

2019	International Union of Geodesy and Geophysics (IUGG) Convener (Montreal; by invitation)
2018-2020	Keiiti Aki Young Scientist Award Committee (American Geophysical Union)
1017	AGU Special Session Chair on “Earthquake source physics”
2017-	Scientific Reports (Nature Publishing Group) - Editorial Board
2017-	International Association of Geodesy-International Association of Seismology and Physics of the Earth’s Interior Convener (IAG-IASPEI) (Kobe; by invitation)
2016	AGU Special Session Chair on “Earth’s core”
2016	Study of the Earth’s Deep Interior (SEDI) Discussion leader (Nantes; by invitation)
2015-2019	Study of the Earth's Deep Interior (SEDI/IUGG) - Executive Committee
2014-	Physics of Earth and Planetary Interiors - Editorial Board
2014	American Geophysical Union (AGU) Council Secretary Candidate - Study of the Earth’s Deep Interior focus group
2014	AGU Special Session Chair on “Structure and evolution of cratons”
2014	AGU Special Session Chair on “Seismic multi-arrays”
2013	Faculty instructor - Advanced Studies Institute on Seismological Research Course sponsored by IRIS International Development Seismology, Kuwait City, Kuwait
2012	AGU Council Secretary Candidate - Study of the Earth’s Deep Interior focus group
2011-present	Incorporated Research Institutions for Seismology (IRIS) Internship Program host (NSF funded research experience for undergraduates)
2010	Member of AAS <i>Theo Murphy High Flyers Think Tank</i> on “Searching the Deep Earth: The Future of Australian Resource Discovery and Utilisation”
2010	AGU Special Session Chair on the Earth’s core (by invitation)
2009	AGU Special Session Chair on the Mohorovičić’s discontinuity beneath Europe
2008	AGU Special Session Chair on the Earth’s core (by invitation)
2007-present	IRIS Foreign Affiliate Representative for the Australian National University
2004-present	AGU Outstanding Student Paper Award evaluator
2004	AGU Special Session Chair on the Earth’s core (by invitation)
2003	AGU Special Session co-chair on the Deep Earth
1999	AGU Special Session co-chair on the Earth’s lowermost mantle
1999-	Peer referee for <u>Science</u> , <u>Earth and Planetary Science Letters</u> , <u>Geophysical Research Letters</u> , <u>Journal of Geophysical Research - Solid Earth</u> , <u>Geophysical Journal International</u> , <u>Physics of the Earth and Planetary Interiors</u> , <u>Journal of Geophysics and Engineering</u> , <u>J. Asian Earth Sciences</u> .
-	Peer referee for <i>Cambridge University Press</i> (book proposals)
-	Proposal evaluator for USA National Science Foundation Geophysics Program
-	Proposal evaluator for Australian Research Council (ARC)

- Proposal evaluator for European Research Council (ERC)
- Guest in a number of radio talk shows on scientific research

#### **OUTREACH, COLLEGIALLY AND COLLABORATION**

---

2018-present Registered with ACT Science Mentors Program (ACT Education Directorate)

2016-present Registered with STEM Professionals in School (CSIRO)

I have given talks and led tours of various groups of students and visitors to the Seismological Laboratory at UC Berkeley during my graduate student days, and to the Seismology and Mathematical Geophysics facilities at RSES; I have responded to TV crews, radio and newspapers regarding earthquakes and seismology in general. I have given a number of interviews related to my research and discoveries to international media such as World BBC News, ABC News, Science Daily, CNN, Croatian Radio-Television, Canberra Times, San Francisco Chronicle, Sydney Herald, Croatian Daily Newspaper (morning edition), etc. I have also given a number of interviews for the Australian TV channels (e.g. ABC, Channel 9) and radio (e.g. ABC, SBS, Diffusion Science radio) on global seismology, the role of the Warramunga Seismic and Infrasound facility in the world's peace, and on nuclear non-proliferation monitoring in more general terms.

Apart from collaboration with researchers from the ANU and other Australian universities, I collaborate internationally with researchers from Europe (UK, France, Spain, Croatia, Sweden), Asia (Japan, Korea, China), the United States and Canada. My research is multi-disciplinary in nature, which results in collaboration across the fields of seismology, geodynamics, mineral physics, geochemistry, tectonics, marine geophysics and mathematical geophysics. I demonstrate my mentoring in the field, and growing of junior staff by regularly utilising my international connections to help advance the career opportunities and network possibilities of the early career researchers and students I supervise.

I strongly support women researchers in Science, Technology, Engineering and Mathematics (STEM), which is visible through the number of women PhD students I supervise to completion.

#### **SUPERVISED STUDENTS AND STAFF AT ANU (SINCE 2007)**

---

##### *i) PhD students, Principal supervisor (Chair of supervisory panel)*

2018-	Thuany P. C. de Lima (f; from Brazil)
2018-	Sheng Wang (m; from China)
2017-	Anna Makushkina (f; from Russia)
2016-	Son Thanh Pham (m; from Vietnam)
2014-	Joanne Stephenson (f; from UK)
2013-	Nita Sebastien (f; from India)
2013-2017	Tanja Pejić (f; now seismologist at Geoscience Australia; from Croatia)
2012-2017	Marija Mustać (f; now postdoc at the University of Zagreb; from Croatia)
2011-2015	Surya Pachhai (m; now postdoc at the UC San Diego/SCRIPPS; from Nepal)
2010-2014	Mallory Young (f; now geophysicist in Perth; from USA)

*ii) PhD students, visiting PhD students and advisor on advisory board*

2018-	Lynette Chen (f; ANU)
2017-	Shang Xueyi (m; Central South University, China)
2017-	Yuwei Li (f; ANU)
2016-2017	Anna Makushkina (f; University of Copenhagen, Denmark)
2014-2018	Rhys Hawkins (m; ANU)
2014-2017	Tae-Gyu Yee (m; Seoul National University, South Korea)
2013-2016	Ingo L. Stotz Canales (m; ANU)
2013	Qian Wang (f; Beijing University of Aeronautics & Astronautics, China)
2012-2016	Roberto Benavente (m; ANU)
2009-2013	Josip Stipčević (m; University of Zagreb, Croatia)
2008-2011	Thomas Bodin (m; ANU)

*iii) Postdoctoral Fellows*

2017-2018	Dr Marija Mustać (now postdoc at University of Zagreb)
2014-	Dr Babak Hejrani (now half time at Geoscience Australia)
2014-2017	Dr Seongryong Kim (now research professor at Seoul National University)
2013-2015	Dr Josip Stipčević (now Assistant Professor at University of Zagreb)
2013-2016	Dr Christian Sippl (now postdoc at GFZ, Potsdam)

*iv) Honours and final projects students*

2014-2015	Jack Muir ( <b>ANU Physics Medal; The Monash Medal</b> ; first-authored paper in Geophys. J. Int.; now PhD at Caltech)
2009-2010	Myall Hingee (first-authored paper in Geophys. J. Int.)
2009	Eddie Leask (first-authored IUGG poster presentation)
2009	Steven Petkovski (first-authored AGU poster presentation)

*v) PhB (Philosophy Bachelor degree at ANU) and visiting research students*

2018	Maddison Wait (PhB; ASC project; a paper in preparation)
2018	Yepin (Eva) Zhang (visiting student from Canada; special topics)
2017	Claire Richardson (USA IRIS-funded student intern)
2016	Thuany Patricia de Lima (student intern from Univ. Fed. Rio Grande do Norte)
2015	Alex Burky (USA IRIS-funded student inter; now PhD at Princeton)
2014	Lynette Chen (PhB; ASC project and academic advisor; <b>The Crawford Prize</b> )
2014	Mirabella Wawn (ANU engineering student)
2013	Jane Lin (PhB; ASC project; <b>ANU Astronomy Medal</b> )
2012	Archana Yagadisan (student intern from IIT Roorkee, India)
2012/2013	Debjani Bhowmick (student intern from Indian School of Mines, India)
2012	Yunfan Zhang (student intern from Princeton University, now PhD at Berkeley)
2012	Dulcie Aileen Head (USA IRIS-funded student intern, now PhD at Stanford)
2011-2012	Don McKinnon (PhB; ASC project and ANU summer intern)
2011	Richard Skelton (PhB; ASC project)
2011	Aleksandra Denisenko (Siberian Research Institute funded visiting student)
2011	HongAn Le (PhB; ASC project)
2011	Caroline Bartlett (USA IRIS-funded student intern)

2010	Yan Zhao (PhB; ASC project)
2010-2011	Silvie Ngo (ANU student; co-authored paper in Nature Geoscience)
2010	Madlazim Madlazim (AusAid funded intern)
2009	Myall Hingee (PhB; ASC project; first-authored paper in Geophys. J. Int.)
2009	Daniel Leykam (PhB; ASC project; first-authored paper in Geophys. J. Int.)
2009	Amarjeet Kumar (student intern from IIT Kharagpur; co-authored publication)
2009	Alon Arad (ANU summer intern)
2008	Jessica Huspedth (PhB; ASC project)

*vi) M.Sc. students*

2018-	Angelina Egorova (from Russia)
-------	--------------------------------

*vii) Casual work students (computer science and mathematics)*

2014-2015	Richard Ren
2009-2011	Cong Phuoc Huynh
2009-2011	Yuan Fang
2008-2011	Debdeep Banerjee
2007-2009	Jason Li

*viii) Academic and Technical Staff*

2017-	Dr Rhodri Davies (ARC Future Fellow)
2017-	Dr Lauren Waszek (ARC DECRA Fellow)
2017-	Dr Caroline Eakin
2017-	Dr Benoît Tauzin
2017-	A/Prof Meghan Miller
2017-	Dr Sima Mousavi
2017-	Joel Tatapudi (WRA)
2017-	Dr Michelle Salmon
2014-2016	James Khattiyakul (WRA)
2014-2017	Sam Rayapaty (WRA)
2012-2014	Anthony Percival (WRA)
2012-2013	Lobo Fraser (WRA)
2009-2014	Dr Cristo Tarlowski
2009-2010	Dr Pierre Arroucau
2007-2011	Scott Savage (WRA)
2007-2017	Armando Arcidiaco

## INVITED TALKS AND SEMINARS

---

### *i) Invited Talks at National and International Meetings*

- (1) **Tkalčić, H.**, Deep Earth structure revealed by the global correlation wavefield, *INVITED TALK*, AGU, Washington, DC, 2018 (December).
- (2) **Tkalčić, H.** and T-S. Pham, New constraints on the Earth's core from global correlation wavefield, *INVITED TALK*, EGU, Vienna, 2018.
- (3) **Tkalčić, H.**, The Earth's inner core revealed by observational seismology, *INVITED KEYNOTE LECTURE*, Core–Mantle Evolution General Meeting, Matsuyama, Japan, 2018.
- (4) **Tkalčić, H.**, From the crust to the core using recent advances in global seismology, global interferometry and mathematical geophysics, *INVITED KEYNOTE LECTURE*, Lithospheric Workshop, Perth, Australia, 2017.
- (5) **Tkalčić, H.**, The inner core 2.0, *INVITED KEYNOTE LECTURE*, Gordon Research Conference, South Hadley, MA, USA, 2017.
- (6) **Tkalčić, H.**, A review of seismology of the inner core, *INVITED TALK*, EGU, Vienna, 2016.
- (7) **Tkalčić, H.**, Complex inner core of the Earth, *INVITED TALK*, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract DI42A-01, San Francisco, USA, 2015.
- (8) **Tkalčić, H.**, The Earth's inner core – the last frontier of global seismology, *INVITED KEYNOTE LECTURE*, *Study of the Deep Earth's Interior Meeting*, Kanagawa, Japan, 2014.
- (9) **Tkalčić, H.**, Young, M., Bodin, T. and Sambridge, M., Seismological observation of shuffling rotational dynamics of the Earth's inner core, *INVITED*, *East-West Asymmetry of Inner Core and Rotational Dynamics Conference*, Wuhan, China, 2012.
- (10) **Tkalčić, H.**, The Inner Core of the Earth From a Seismological Perspective, *INVITED*, *Union Session*, *IUGG General Assembly*, Melbourne, Australia, 2011.
- (11) Sambridge, M., **Tkalčić, H.** and A. Jackson, *Benford's Law in Natural Sciences*, *INVITED*, *IUGG General Assembly*, Melbourne, Australia, 2011.
- (12) **Tkalčić, H.**, The Earth's Core: Seismological Perspective, *INVITED LECTURE*, *From Core to Crust: Towards an Integrated Vision of Earth's Interior*, International Centre for Theoretical Physics, Trieste, Italy, 2009.
- (13) **Tkalčić, H.**, V.F. Cormier and B.L.N. Kennett, Inner core boundary properties from PcP and PKiKP waves, *INVITED*, *IASPEI General Assembly*, Capetown, South Africa, 2009.
- (14) **Tkalčić, H.**, D. Dreger, G. Foulger, B. Julian and A. Fichtner, A Seismological Portrait of the Anomalous 1996 Bardarbunga Volcano, Iceland, Earthquake, *INVITED*, *Eos Trans. AGU*, 90(52), Fall Meet. Suppl., Abstract S21B-1710, San Francisco, USA, 2009.

### *ii) Further financial support to travel and attend international meetings*

2016                      AuScope Travel Bursary Award (**Value: A\$ 10,000**)



- 2013 IRIS (Incorporated Research Institutions for Seismology) travel grant as Faculty in Advanced Studies Institute on Seismological Research, Kuwait City, Kuwait
- 2011 IRIS travel grant to the data/metadata workshop in Bangkok, Thailand
- 2010 Japan Society for promotion of science travel award to tour Japan's universities
- 2007 IRIS travel grant to the data/metadata workshop in Kuala Lumpur, Malaysia
- 2004 NSF scholarship support to the 1. MYRES workshop at UCSD, La Jolla
- 2003 IRIS scholarship support to the Annual IRIS Workshop in Yosemite
- 2001 IASPEI award, supporting participation in the IAGA/IASPEI Joint Assembly Hanoi, Vietnam, August 18-30, 2001
- 2000 NSF award, supporting participation in the Fifth Workshop on "3-D Modeling of Seismic Waves Generation, Propagation and Their Inversion" Trieste, Italy
- 2000 IRIS scholarship support to the Annual IRIS Workshop in Samoset, Maine

*iii) Invited Seminars at National and International Institutions*

- 2018 University of Cambridge, UK
- 2018 University of Zagreb (Department of Geophysics), Croatia
- 2018 Seismology and Geology Office (ARSO), Ljubljana, Slovenia
- 2017 Universidad Complutense de Madrid, Spain
- 2015 University of Science and Technology, Hanoi, Vietnam
- 2014 Vietnam Academy of Science and Technology, Institute of Geophysics, Hanoi, Vietnam
- 2014 Pukyong National University, Busan, South Korea
- 2013 Arizona State University, AZ, USA
- 2012 Seoul National University, Seoul, South Korea
- 2012 Korean Polar Research Institute, Incheon, South Korea
- 2011 Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Yokosuka, Japan
- 2011 University of Tokyo, Earthquake Research Institute, Tokyo, Japan
- 2011 University of Hokkaido, Sapporo, Japan
- 2011 Disaster Prevention Research Institute, Kyoto, Japan
- 2011 University of Kyoto, Kyoto, Japan
- 2011 University of Tohoku, Sendai City, Japan
- 2011 University of Zagreb, Zagreb, Croatia
- 2010 Academia Sinica, Taipei, Taiwan
- 2010 National Taiwan University, Taipei, Taiwan
- 2009 National Research Institute for Earth Science & Disaster Prevention (NIED), Tsukuba, Japan
- 2009 University of Tokyo, Earthquake Research Institute, Tokyo, Japan
- 2009 Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Yokosuka, Japan
- 2009 Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy
- 2009 University of Melbourne, Melbourne, Australia
- 2009 University of Zagreb, Zagreb, Croatia
- 2008 University of Belgrade, Belgrade, Serbia
- 2008 University of Zagreb, Zagreb, Croatia
- 2006 The Australian National University, Canberra, Australia

2006 University of Puerto Rico, Mayaguez, PR, USA  
 2005 California Institute of Technology (Caltech), Pasadena, CA, USA  
 2005 University of California Santa Cruz, Santa Cruz, CA, USA  
 2005 Multimax, Washington DC, USA  
 2005 3DGeo, Santa Clara, CA, USA  
 2005 University of Nevada Reno, NV, USA  
 2004 Institut de Physique du Globe de Paris, Paris, France  
 2004 University of California at Berkeley, Berkeley, CA, USA  
 2002 University of California San Diego, La Jolla, CA, USA  
 2002 California Institute of Technology (Caltech), Pasadena, CA, USA  
 2002 Lawrence Livermore National Laboratory, CA, USA  
 2001 University of Zagreb, Zagreb, Croatia  
 2001 Seismology and Geology Office (ARSO), Ljubljana, Slovenia  
 2001 University of Trieste, Trieste, Italy  
 1999 University of Zagreb, Zagreb, Croatia

#### ENGAGEMENT AND IMPACT

---

My engagement outside academia is twofold:

1) through nuclear non-proliferation research funded by the US DoE/DoD Air Force Research Lab (and the Space Vehicles Directorate). It has been possible to engage with this type of research due to the fact that seismology is one of the core competencies of nuclear non-proliferation efforts. I lead the only non-US university based group funded for research in seismology. The topics of interests in seismology are: i) Seismic source physics, ii) Discrimination and yield estimation, iii) Attenuation and full waveform Earth models, iv) Velocity Earth models, v) Location and discrimination ground truth and vi) Automated data processing and interactive analysis.

2) through my commitment to manage the operation and maintenance of the Warramunga Seismic and Infrasonic facility in Northern Territory. The main purpose of Warramunga is nuclear test monitoring. Australia is among the countries that ratified the Comprehensive Test Ban Treaty (CTBT) in 1998 and as one of the member countries is obliged to operate and maintain monitoring facilities. Warramunga is the primary station, hosting both seismic and infrasonic arrays.

#### GRANT/FELLOWSHIP FUNDING

---

##### *i) Competitive (total as chief investigator only > AUD\$ 8.8M)*

2020-2021 “Macquarie Ridge Complex in 3D” (**lead chief investigator**); Marine National Facility granted the ship time on RV Investigator.

2014-2018 “Rapid determination of earthquake sources in Australia” (**lead chief investigator**); Australian Research Council Discovery Proposal *DP140102533*;

2013-2017 “Craton modification and growth: The east Albany-Fraser Orogen in 3-D” (**lead chief investigator**); Australian Research Council Linkage Proposal *LP130100413*

2013-2016 “Multi-array, multi-frequency probing of the Earth’s heterogeneity” (**lead chief investigator**); Australian Research Council Discovery Proposal *DP130101473*;

- 2013-2017 “Improved Earth structure in Northeast Asia and seismic moment tensor inversion using Bayesian partition modeling” (**lead chief investigator**); US Air Force Research Lab (DoD/AFRL) and the Department of Energy’s National Nuclear Security Administration (DOE/NNSA);
- 2009-2011 “Seismic tomography using signal and noise: A new window into deep Earth” (co-CI with CI N. Rawlinson); Australian Research Council Discovery Proposal;
- 2009 “HZZ - Croatian Agency for Science” Travel Grant to support a collaborative research with Croatian scientists and visit of J. Stipčević to the ANU;
- 2007-2011 “Seismicity of Croatia” (external collaborator with CI M. Herak); Government of Croatia;
- 2006-2009 “Lithospheric structure and regional moment tensor inversion in the Middle East” (**lead chief investigator**); US Air Force Research Lab (DoD/AFRL), the Army Space and Missile Def. Command (DoD/SMDC) and DOE/NNSA;
- 2004 “Study of the centermost inner core using seismology” Feasibility Study proposal funded by the Laboratory Directed Research and Development program at LLNL (**lead chief investigator**); The LDRD Feasibility Study is competitive and prestigious internal funding, awarded in a programmatic-focused National Lab environment to support fundamental research.

*ii) Other funding Based on Project Proposals (total > AUD\$ 8.2M)*

- 2018 Budget for Thirteenth Contract Year for International Monitoring System (IMS) Primary Seismic Station PS02 and IMS Infrasound Station IS07 in Warramunga, Australia (Amendment No. 11); (**lead budget proposal, negotiation and overall contract management**); Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization;
- 2018-2020 Dynamic topography of the North Atlantic region; New insights from passive seismic imaging; (**lead grant holder; PhD funding for Ms Anna Makushkina**); Independent Research Fund Denmark | Natural Sciences;
- 2016 3D Green’s functions for the Australasian region for the estimation of the seismic source parameters; (**lead chief investigator**); Geoscience Australia
- 2013-2017 Budget for the Tenth Contract Year for International Monitoring System (IMS) Primary Seismic Station PS02 and IMS Infrasound Station IS07 in Warramunga, Australia (Amendment No. 10 and four budget extensions); (**lead budget proposal, negotiation and overall contract management**); Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization;
- 2012 Budget for Tenth Contract Year for International Monitoring System (IMS) Primary Seismic Station PS02 and IMS Infrasound Station IS07 in Warramunga, Australia (Amendment No. 9); (**lead budget proposal, negotiation and overall contract management**); Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization;

- 2011 Budget for Ninth Contract Year for International Monitoring System (IMS) Primary Seismic Station PS02 and IMS Infrasonnd Station IS07 in Warramunga, Australia (Amendment No. 8); (**lead budget proposal, negotiation and overall contract management**); Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization;
- 2011 Secured 50% EFT for a senior technical officer (initial duration 15 months) from the Australian National Data Service Project DC7A “ANU-ANDS Data Capture – Earth Sciences” (prepared by Moncur et al.)
- 2010 Budget for Eight Contract Year for International Monitoring System (IMS) Primary Seismic Station PS02 and IMS Infrasonnd Station IS07 in Warramunga, Australia (Amendment No. 7); (**lead budget proposal, negotiation and overall contract management**); Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization;
- 2009 Budget for Seventh Contract Year for International Monitoring System (IMS) Primary Seismic Station PS02 and IMS Infrasonnd Station IS07 in Warramunga, Australia (Amendment No. 6); (**lead budget proposal, negotiation and overall contract management**); Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization;
- 2008 Budget for Sixth Contract Year for International Monitoring System (IMS) Primary Seismic Station PS02 and IMS Infrasonnd Station IS07 in Warramunga, Australia (Amendment No. 5); (Kennett and Tkalčić – a transition year to **overall contract management**) Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization;
- 2008 ANU Vice Chancellor Travel Grant to host outstanding scientists (proposal writer for hosting Professor Vernon Cormier from the USA);
- 2007 Computing Green’s functions for the Australasian region for the estimation of the seismic source parameters; (**lead chief investigator**), Geoscience Australia.

## PUBLICATIONS

---

(\*\* Collaboration with undergraduate student advisee)

(\* Collaboration with graduate student advisee)

## PUBLICATIONS – PAPERS CURRENTLY UNDER REVIEW

---

81. \*Pejić, T., Hawkins, R., Sambridge, M. and **Tkalčić, H.**, Transdimensional Bayesian attenuation tomography of the Earth’s inner core, *submitted*, 2018.
80. \***Tkalčić, H.** and T-S. Phạm, Detection of "J waves" in the Earth's correlation wavefield: New constraints on shear properties of the Earth's inner core, *submitted*, 2018.

79. White, L., N. Rawlinson, G. Lister, F. Waldhauser, B. Hejrani, D. Thompson, D. Tanner, C. Macpherson, J. Morgan and **H. Tkalčić**, Earth's deepest earthquake swarms track fluid ascent beneath nascent arc volcanoes, *submitted*, 2018.
78. Tauzin, B., T-S. Phạm and **H. Tkalčić**, Generalized receiver functions from seismic interferometry: A tutorial, *submitted*, 2018.
77. \*Sebastian, N., **H. Tkalčić**, C. Sippl, S. Kim, A. Reading and Y. Chen, Inference on the crust-mantle transition beneath northeast China from receiver-based passive seismology methods, *in revision*, 2018.
76. Thompson, D., N. Rawlinson and **H. Tkalčić**, Testing the limits of virtual deep seismic sounding via new crustal thickness estimates of the Australian continent, *revised*, 2018.
75. Fontaine, F.R., G. Roullet, B. Hejrani, L. Michon, G. Barruol, **H. Tkalčić**, V. Ferazzini, A. Di Muro, D. Reymond, A. Peltier, T. Staudacher and F. Massin, Mechanism and precursors to the 2007 Piton de la Fournaise volcano caldera collapse, La Reunion, *revised*, 2018.

---

#### PUBLICATIONS – ACADEMIC BOOK

74. **Tkalčić, H.**, The Earth's Inner Core Revealed by Observational Seismology, Cambridge University Press, Cambridge, UK, <https://doi.org/10.1017/9781139583954>, 2017.

---

#### PUBLICATIONS – PEER REVIEWED

73. \*Phạm, T-S. and **H. Tkalčić**, Antarctic ice properties revealed from teleseismic P-wave coda autocorrelation, *J. Geophys. Res.*, *accepted on 3/09/2018*.
72. Hejrani, B. and **H. Tkalčić**, The centroid location, magnitude and the mechanism of 20 May 2016 Petermann Ranges earthquake, *Austral. J. Earth Sci.*, *accepted on 10/07/2018*.
71. \*Phạm, T-S., **H. Tkalčić**, M. Sambridge and B.L.N. Kennett, The Earth's correlation wavefield: late coda correlation, *Geophys. Res. Lett.*, 45, <https://doi.org/10.1002/2018GL077244>, 2018. (IF:4.25; Cit:1)
70. Lister, G.S., **H. Tkalčić**, B. Hejrani, A. Koulali, E. Rohling, M.A. Forster and S. McClusky, Lineaments control and earthquake ruptures on the East Japan megathrust, *Lithosphere*, <https://doi.org/10.1130/L687.1>, 2018. (IF:4.17; Cit:0)
69. Mattesini, M., A.B. Belonoshko and **H. Tkalčić**, Polymorphic nature of iron and degree of lattice preferred orientation beneath the Earth's inner core boundary, *G-Cubed*, 19, <https://doi.org/10.1002/2017GC007285>, 2018. (IF:3.20; Cit:0)
68. \*Mustać, M., **H. Tkalčić** and A.L. Burky, Source mechanism of earthquakes in The Geysers geothermal field from a Bayesian standpoint, *J. Geophys. Res.*, 123, 513-532, <https://doi.org/10.1002/2017JB014897>, 2018. (IF:3.46; Cit:0)
67. Hejrani, B., **H. Tkalčić** and A. Fichtner, Centroid moment tensor catalogue using 3D continental scale Earth model: application to earthquakes in Papua New Guinea and the Solomon Islands, *J. Geophys. Res.*, 122, 5517-5543, doi:10.1002/2017JB014230, 2017. (IF:3.46; Cit:7)

66. Kim, S., **H. Tkalčić** and J. Rhie, Seismic constraints on magma evolution beneath Mount Baekdu (Changbai) volcano from transdimensional Bayesian inversion of ambient noise data, *J. Geophys. Res.*, 122, 5452-5473, doi:10.1002/2017JB014105, 2017. (IF:3.46; Cit:0)
65. Sippl, C., B.L.N. Kennett, **H. Tkalčić**, K. Gessner and C. Spaggiari, Crustal surface-wave velocity structure of the east Albany-Fraser Orogen, Western Australia, from ambient noise recordings, *Geophys. J. Int.*, 210, 1641-1651, doi:10.1093/gji/ggx264, 2017. (IF:2.42; Cit:0)
64. Sippl, C., L. Brisbout, C. Spaggiari, K. Gessner, **H. Tkalčić**, B.L.N. Kennett and R. Murdie, Crustal structure of a Proterozoic craton boundary: east Albany-Fraser Orogen, Western Australia, imaged with passive seismic and gravity anomaly data, *Precam. Res.*, 296, 78-92, doi:10.1016/j.precamres.2017.04.041, 2017. (IF:3.91; Cit:1)
63. \*Pham T-S. and **H. Tkalčić**, On the feasibility and use of teleseismic P-wave coda autocorrelation for mapping shallow seismic discontinuities, *J. Geophys. Res.*, 122, doi:10.1002/2017JB013975, 2017. (IF:3.46; Cit:4)
62. \*Pejić, T., **H. Tkalčić**, M. Sambridge, V.F. Cormier and R. Benavente, Attenuation tomography of the upper inner core, *J. Geophys. Res.*, 122, 3008-3032, doi:10.1002/2016JB013692, 2017. (IF:3.46; Cit:3)
61. \*Mustać, M. and **H. Tkalčić**, Data noise as site-specific weight factor in a hierarchical Bayesian moment tensor inversion: A case study of the Geysers and Long Valley Caldera earthquakes, *Bull. Seismol. Soc. Am.*, 107(4), doi:10.1785/0120160379, 2017. (IF:2.15; Cit:0)
60. Stipčević, J., B.L.N. Kennett and **H. Tkalčić**, Simultaneous use of multiple seismic arrays, *Geophys. J. Int.*, 209, 770-783, doi:10.1093/gji/ggx027, 2017. (IF:2.42; Cit:0)
59. Kim, S., **H. Tkalčić**, Rhie, J. and Chen, Y., Intraplate volcanism controlled by back-arc and continental structures in northeast Asia inferred from trans-dimensional Bayesian ambient noise tomography, *Geophys. Res. Lett.*, 43, doi:10.1002/2016GL069483, 2016. (IF:4.25; Cit:4)
58. Kim, S., J. Dettmer, J. Rhie and **H. Tkalčić**, Highly efficient Bayesian joint inversion for receiver based data and its application to lithospheric structure beneath the southern Korean Peninsula, *Geophys. J. Int.*, 206, 328-344, doi:10.1093/gji/ggw149, 2016. (IF:2.42; Cit:4)
57. \*Mustać, M. and **H. Tkalčić**, Point source moment tensor inversion through a Bayesian hierarchical model, *Geophys. J. Int.*, 204 (1), 311-323, doi:10.1093/gji/ggv458, 2016. (IF:2.42; Cit:18)
56. \*Pachhai, S., **H. Tkalčić** and G. Masters, Estimation of splitting functions from Earth's normal mode using the neighbourhood algorithm, *Geophys. J. Int.*, 204 (1), 111-126, doi:10.1093/gji/ggv414, 2016. (IF:2.42; Cit:2)
55. **Tkalčić, H.**, M.K. Young, J.B. Muir, R. Davies and M. Mattesini, Strong, multi-scale heterogeneity in Earth's lowermost mantle, *Scientific Reports*, 5, doi:10.1038/srep18416, 2015. (IF:4.12; Cit:7)
54. Sippl, C., B.L.N. Kennett, **H. Tkalčić**, C.V. Spaggiari and K. Gessner, New constraints on the current stress field and seismic velocity structure of the eastern Yilgarn craton from mechanisms of local earthquakes, *Austral. J. Earth Sci.*, 62(8), 921-931, 2015. (IF:1.42; Cit:4)

53. Tanaka, S. and **H. Tkalčić**, Complex inner core boundary from frequency characteristics of the reflection coefficients of PKiKP waves observed by Hi-net, *Progress Earth Planet. Sci.*, doi:10.1186/s40645-015-0064-3, 2015. (IF:2.48; Cit:8)
52. \*Pachhai, S., J. Dettmer and **H. Tkalčić**, Ultra-low velocity zones beneath the Philippine and Tasman Seas revealed by a trans-dimensional Bayesian waveform inversion, *Geophys. J. Int.*, 203(2), 1302-1318, doi:10.1093/gji/ggv368, 2015. (IF:2.42; Cit:4)
51. \*\*Muir, J.B. and **H. Tkalčić**, A method of spherical harmonic analysis in the geosciences via Bayesian hierarchical inference, *Geophys. J. Int.* 203(2), 1164-1171, doi:10.1093/gji/ggv361, 2015. (IF:2.42; Cit:1)
50. **Tkalčić, H.**, Complex inner core of the Earth: The last frontier of global seismology, *Rev. Geophys.*, 53/1, 59-94, doi:10.1002/2014RG000469, 2015. (IF:12.36; Cit:24)
49. Gal, M., A.M. Reading, S.P. Ellingsen, L. Gualtieri, K.D. Koper, R. Burlacu, **H. Tkalčić**, and M.A. Hemer, The frequency dependence and locations of short-period microseisms generated in the Southern Ocean and West Pacific, *J. Geophys. Res.*, 120, doi:10.1002/2015JB012210, 2015. (IF:3.46; Cit:14)
48. Fontaine, F.R., Barruol, G., **H. Tkalčić**, Wölbern, I., Rumpker, G., Bodin, T. and Haugmard, M., Crustal and Uppermost Mantle structure variation beneath La Réunion hotspot track, *Geophys. J. Int.*, 203, 107-126, 2015. (IF:2.42; Cit:23)
47. \*Pachhai, S., **H. Tkalčić** and J. Dettmer, Bayesian inference for ultra low velocity zones in the Earth's lowermost mantle: Multiple-layer ULVZ confirmed beneath the east of Philippines, *J. Geophys. Res.*, 7823-2845, 119, doi:10.1002/2014JB011067, 2014. (IF:3.46; Cit:9)
46. \*Yee, T.-G., J. Rhie and **H. Tkalčić**, Regionally heterogeneous uppermost inner core observed with Hi-net array, *J. Geophys. Res.*, 7823-2845, 119, doi:10.1002/2014JB011341, 2014. (IF:3.46; Cit:16)
45. Reading, A.M., K.D. Koper, M. Gal, L.S. Graham, **H. Tkalčić**, and M.D. Hemer, Dominant seismic noise sources in the Southern Ocean and West Pacific, 2000-2012, recorded at Warramunga Array (WRA), Australia, *Geophys. Res. Lett.*, doi:10.1002/2014GL060073, 2014. (IF:4.25; Cit:23)
44. Lister, G.S., **H. Tkalčić**, M.A. Forster and S. McClusky, Skewed orientation groups in scatter plots of earthquake fault plane solutions: Implications for extensional geometry at oceanic spreading centers, *J. Geophys. Res.*, 119, doi:10.1002/2013JB010706, 2014. (IF:3.46; Cit:2)
43. **Tkalčić, H.**, T. Bodin, M.K. Young and M. Sambridge (2013), On the nature of the P-wave velocity gradient in the inner core beneath central America, *Asian J. Earth Sci., Special Issue on the Core Structure and Dynamics*, 24, 5, 699-705, doi:10.1007/s12583-013-0365-7, 2013. (IF:2.87; Cit:5)
42. \*Young, M.K., **H. Tkalčić**, T. Bodin and M. Sambridge, Global P-wave tomography of Earth's lowermost mantle from partition modeling, *J. Geophys. Res.*, doi: 10.1002/jgrb.50391, 2013. (IF:3.46; Cit:22)

41. Mattesini, M., A.B. Belonoshko, **H. Tkalčić**, E. Buforn, A. Udias and R. Ahuja, Candy wrapper for the Earth's inner core, *Scientific Reports*, 3:2096, doi:10.1038/srep02096, 2013. (IF:4.12; Cit:13)
40. **Tkalčić, H.**, M.K. Young, T. Bodin, S. Ngo and M. Sambridge, The shuffling rotation of the Earth's inner core, *Nature Geoscience*, doi:10.1038/NGEO1813, 2013. (IF:13.94; Cit:43)
39. \*Kiseeva, E.S., G.M. Yaxley, A.S. Stepanov, **H. Tkalčić**, K.D. Litasov and V.S. Kamenetsky, Metapyroxenite in the mantle transition zone revealed from majorite inclusions in diamonds, *Geology*, doi:10.1130/G34311.1, 2013. (IF:4.64; Cit:23)
38. Fontaine, F.R., **H. Tkalčić** and B.L.N. Kennett, Crustal complexity in the Lachlan fold belt revealed from teleseismic receiver functions, *Austral. J. Earth Sci.*, 60, 413-430, 2013. (IF:1.42; Cit:5)
37. Fontaine, F.R., **H. Tkalčić** and B.L.N. Kennett, Imaging crustal structure variation across southeastern Australia, *Tectonophysics*, 582, 112-125, 2013. (IF:2.43; Cit:8)
36. Sambridge, M., T. Bodin, K. Gallagher, and **H. Tkalčić**, Transdimensional inference in the geosciences, *Phyl. Trans. R. Soc. A.*, 371: 20110547, 2013. (IF:2.75; Cit:71)
35. **Tkalčić, H.**, N. Rawlinson, P. Arroucau, A. Kumar and B.L.N. Kennett, Multi-Step modeling of receiver-based seismic and ambient noise data from WOMBAT array: Crustal structure beneath southeast Australia, *Geophys. J. Int.*, 189, 1681-1700, doi:1111/j.1365-246x.2012.05442.x, 2012. (IF:2.42; Cit:19)
34. Reading, A.M., **H. Tkalčić**, B.L.N. Kennett, S.P. Johnson and S. Sheppard, Seismic structure of the crust and uppermost mantle of the Capricorn and Paterson Orogens and adjacent cratons, Western Australia, from passive seismic transects, *Precambrian Research*, 196-197, doi:10.1016/j.precam-res.2011.07.001, 295-308, 2012. (IF:4.65; Cit:20)
33. \*Young, M., **H. Tkalčić**, N. Rawlinson and A. M. Reading, Full waveform moment tensor inversion in a low seismicity region using multiple teleseismic datasets and ambient noise: application to the 2007 Shark Bay, Western Australia, earthquake, *Geophys. J. Int.*, 188, 1303-1321, doi: 10.1111/j.1365-246X.2011.05326.x, 2012. (IF:2.42; Cit:1)
32. \*Bodin, T., M. Sambridge, **H. Tkalčić**, P. Arroucau, K. Gallagher and N. Rawlinson, Transdimensional inversion of receiver functions and surface wave dispersion, *J. Geophys. Res.*, 117, B02301, doi:1029/2011JB008560, 2012. (IF:3.46; Cit:151)  
*This presentation won AGU 2010 Outstanding Student Paper Award - Seismology Section.*
31. Sambridge, M., **H. Tkalčić**, and P. Arroucau, Benford's Law of First Digits: From Mathematical Curiosity to Change Detector, *Asia Pacific Mathematics Newsletter*, 1, No. 4, 1-5, 2011. (IF:unknown; Cit:13)
30. Kennett, B.L.N., M. Salmon, E. Saygin, N. Rawlinson, S. Pozgay, **H. Tkalčić**, E. Vanacore, C. Collins, B. Goleby, A. Goncharov, J. Maher, A.M. Reading, A. Aitken, S. Revets, T. Shibutani, G. Clitheroe, P. Arroucau, F.R. Fontaine, AusMoho: the variation of Moho depth in Australia, *Geophys. J. Int.*, doi: 10.1111/j.1365-246X.2011.05194.x, 2011. (IF:2.42; Cit:76)
29. **Tkalčić, H.**, Y. Chen, R. Liu, Z. Huang, L. Sun and W. Chan, Multi-Step modelling of teleseismic receiver functions combined with constraints from seismic tomography: Crustal



- structure beneath southeast China, *Geophys. J. Int.*, 117, doi: 10.1111/j.1365-246X.2011.05132.x, 303-326, 2011. (IF:2.42; Cit:34)
28. \*Stipčević, J., **H. Tkalčić**, M. Herak, S. Markušić and D. Herak, Lithospheric structure of Croatia from teleseismic receiver functions, *Geophys. J. Int.*, 185, 1103-1119, doi: 10.1111/j.1365-246X.2011.05004.x, 2011. (IF:2.42; Cit:25)
- This paper won Best Student Author Award in Geophysical Journal International for 2011.**
27. \*Young, M., N. Rawlinson, P. Arroucau, A. M. Reading and **H. Tkalčić**, High frequency ambient noise tomography of southeast Australia: New constraints on Tasmania's tectonic past, *Geophys. Res. Lett.*, 38, L13313, doi:10.1029/2011GL047971, 2011. (IF:4.25; Cit:41)
26. \*\*Hingee, M., **H. Tkalčić**, A. Fichtner and M. Sambridge, Moment tensor inversion using a 3-D structural model: Applications for the Australian region, *Geophys. J. Int.*, 949-964, doi:10.1111/j.1365-246X.2010.04897.x, 2011. (IF:2.42; Cit:23)
25. Sambridge, M., **H. Tkalčić** and A. Jackson, Benford's law in the natural sciences, *Geophys. Res. Lett.*, 37, L14312, doi:10.1029/2010GL044830, 2010. (IF:4.25; Cit:65)
24. Fichtner A. and **H. Tkalčić**, Insights into the kinematics of a volcanic caldera drop: Probabilistic finite-source inversion of the 1996 Bardarbunga, Iceland, earthquake, *Earth Planet. Sci. Lett.*, 297, 607-615, 2010. (IF:4.58; Cit:21)
23. **Tkalčić, H.**, Large variations in travel times of mantle-sensitive seismic waves from the South Sandwich Islands: Is the Earth's inner core a conglomerate of anisotropic domains?, *Geophys. Res. Lett.*, 37, L14312, doi:10.1029/2010GL043841, 2010. (IF:4.25; Cit:33)
22. Rawlinson, N., **H. Tkalčić**, and A.M. Reading, Structure of the Tasmanian lithosphere from 3-D seismic tomography, *Austral. J. Earth Sci.*, 57, 381-394, 2010. (IF:1.42; Cit:24)
21. **Tkalčić, H.**, V.F. Cormier, B.L.N. Kennett and K. He, Steep reflections from the Earth's core reveal small-scale heterogeneity in the upper mantle, *Phys. Earth Planet. Int.*, 178, 80-91, doi:10.1016/j.pepi.2009.08.004, 2010. (IF:2.42; Cit:19)
20. \*\*Leykam, D., **H. Tkalčić** and A.M. Reading, Core structure reexamined using new teleseismic data recorded in Antarctica: evidence for, at most, weak cylindrical seismic anisotropy in the inner core, *Geophys. J. Int.*, 180, 1329-1343, 2010. (IF:2.42; Cit:25)
19. Chen, Y., F. Niu, R. Liu, Z. Huang, **H. Tkalčić**, L. Sun and W. Chan, Crustal structure beneath China from receiver function analysis, *J. Geophys. Res.*, 115, doi:10.1029/2009JB006386, 2010. (IF:3.46; Cit:108)
18. **Tkalčić, H.**, D.S. Dreger, G.R. Foulger and B.R. Julian, The puzzle of the Bardarbunga, Iceland earthquake: No volumetric component in the source mechanism, *Bull. Seismol. Soc. Am.*, 99, 3077-3085, 2009. (IF:2.15; Cit:23)
17. **Tkalčić H.**, B.L.N. Kennett and V.F. Cormier, On the inner-outer core density contrast from PKiKP/PcP amplitude ratios and uncertainties caused by seismic noise, *Geophys. J. Int.*, doi:10.1111/j.1365-246X.2009.04294.x, 2009. (IF:2.42; Cit:36)
16. **Tkalčić, H.**, A. Rodgers, N. Rawlinson, D. McEwan and C. Snelson, Teleseismic site response and travel time delays in the Las Vegas Basin, *Bull. Seismol. Soc. Am.*, v. 98/4, 2047-2060, doi: 10.1785/0120050239, 2008. (IF:2.15; Cit:7)

15. **Tkalčić, H.** and Kennett, B.L.N., Core structure and heterogeneity: seismological perspective, *Austral. J. Earth Sci.*, doi: 10.1080/08120090801888578, 55:4, 419-431, 2008. (IF:1.42; Cit:20)
  14. Kennett, B.L.N. and **H. Tkalčić**, The dynamic Earth: crustal and mantle heterogeneity, *Austral. J. Earth Sci.*, doi: 10.1080/08120090701883042, 55:3, 265-279, 2008. (IF:1.42; Cit:12)
  13. Pasyanos, M., **H. Tkalčić**, R. Gok, A. Al-Enezi and A. Rodgers, Seismic structure of Kuwait, *Geophys. J. Int.*, 170(3), 299-312, 2007. (IF:2.42; Cit:19)
  12. **Tkalčić, H.**, M. Flanagan and V. Cormier, Observations of near-podal P'P' precursors: Evidence for back scattering from the 150-220 km zone in Earth's upper mantle, *Geophys. Res. Lett.*, 33, L03305, doi:10.1029/2005GL024626, 2006. (IF:4.25; Cit:17)
- This article was featured under "Editor's Choice" in *Science*, 301, 1214-1215, 2006.**
11. **Tkalčić, H.**, M. Pasyanos, A. Rodgers, R. Gök, W. Walter and A. Al-Amri, A multi-step approach in joint modelling of surface wave dispersion and teleseismic receiver functions: Implications for lithospheric structure of the Arabian peninsula, *J. Geophys. Res.*, 111, B11311, doi:10.1029/2005JB004130, 2006. (IF:3.46; Cit:74)
  10. Garcia, R., **Tkalčić** and S. Chevrot, Non-linear analysis of differential travel times of PKP phases and the inner core and D" structure, *Phys. Earth Planet. Int.*, 159, 15-31, 2006. (IF:4.58; Cit:32)
  9. Rodgers, A., **H. Tkalčić** and D. McAllen, Seismic ground motion and site response in Las Vegas Valley, Nevada from NTS Explosions and earthquake data, *Pageoph.*, 163, 55-80, 2006. (IF:1.81; Cit:15)
  8. Romanowicz B., **H. Tkalčić** and L. Breger, On the origin of complexity in PKP travel time data from broadband records, AGU volume on inner core and lower mantle, *AGU Geodynamics Series*, V. Dehant, K. Creager, S. Karato, S. Zatman, Editors, 2003. (IF:unknown; Cit:38)
  7. **Tkalčić H.**, B. Romanowicz and N. Houy, Constraints on D" structure using PKP(AB-DF), PKP(BC-DF) and PcP-P travel time data from broadband records, *Geophys. J. Int.*, 149(3), 599-616, 2002. (IF:2.42; Cit:55)
  6. **Tkalčić H.** and B. Romanowicz, Short scale heterogeneity in the lowermost mantle: insights from PcP-P and ScS-S data, *Earth Planet. Sci. Lett.*, 201(1), 57-68, 2002. (IF:4.58; Cit:32)
  5. **Tkalčić, H.**, Study of deep Earth structure using body waves, Ph.D. dissertation, University of California at Berkeley, 2001 (peer reviewed).
  4. Panning, M., D. Dreger and **H. Tkalčić**, Numerical analysis of real-source velocity heterogeneity on the recovery of isotropic seismic moment tensors, *Geophys. Res. Lett.*, 28, 1815-1818, 2001. (IF:4.25; Cit:23)
  3. Bréger, L., **H. Tkalčić** and B. Romanowicz, The effect of D" on PKP(AB-DF) travel time residuals and possible implications for inner core structure, *Earth Planet. Sci. Lett.*, 175, 133-143, 2000. (IF:4.58; Cit:78)
  2. Dreger, D., **H. Tkalčić** and M. Johnston, Dilatational processes accompanying earthquakes in the Long Valley Caldera, *Science*, 288, 122-125, 2000. (IF:37.21; Cit:139)
  1. Bréger, L., B. Romanowicz and **H. Tkalčić**, PKP(BC-DF) travel time residuals and short scale heterogeneity in the deep Earth, *Geophys. Res. Lett.*, 20, 169-172, 1999. (IF:4.25; Cit:51)

## **PUBLICATIONS – OTHER**

---

**Tkalčić, H.**, Andrija Mohorovičić – an extraordinary scientist who pointed his binoculars down, Seismological Society of Japan – Naifuru, 20167.

## **PROFESSIONAL REPORTS**

---

- **Tkalčić, H.** and S. Kim, Improved Earth structure in northeast Asia and seismic moment tensor inversion from Bayesian partition modelling, Air Force Research Laboratory report, 90 pp., 2017.
- Rodgers, A., **H. Tkalčić** and D. McCallen, The Las Vegas Valley seismic response project: Ground motions in Las Vegas Valley from nuclear explosions at the Nevada Test Site, LLNL internal report, 83 pp., 2005.
- A. Rodgers, **H. Tkalčić** and D. McCallen, Understanding ground motion in Las Vegas: Insights from data analysis and two-dimensional modeling, LLNL internal report, 30 pp., 2004.
- Pasyanos, M., W. Walter, **H. Tkalčić**, G. Franz and M. Flanagan, Geophysical model research and results. Report for Seismic Research Review, 11 pp., 2004.
- **Tkalčić, H.** and G. Laske, An evaluation of the SAIC regionalized model (Part II: Comparison of observed with predicted surface wave dispersion), Report for SAIC, 96 pp., 2003.
- Laske, G. and **H. Tkalčić**, An evaluation of the SAIC regionalized model (Part I: Sediment and crustal thicknesses), Report for SAIC, 37 pp., 2002.

## **BIBLIOMETRICS (AS OF SEPTEMBER 2018)**

---

ORCID: [orcid.org/0000-0001-7072-490X](https://orcid.org/0000-0001-7072-490X)

Researcher ID: [ResearcherID: E-8465-2013](https://www.researcherid.com/ResearcherID/E-8465-2013)

Scopus: [Scopus Author ID: 6602455816](https://www.scopus.com/authid/detail/authid?tid=6602455816)  
Citations: 1263; H-Index: 21 (accessed on 7/9/18)

Google Scholar: <https://scholar.google.com/citations?user=B2BTH18AAAAJ&hl=en>  
Citations: 1836; H-Index: 24; i10-index: 43 (accessed on 7/9/18)

Research Gate: [https://www.researchgate.net/profile/Hrvoje\\_Tkalcic](https://www.researchgate.net/profile/Hrvoje_Tkalcic)  
Citations: 1476; RG: 36.15 (accessed on 7/9/18)