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Updated on Nov 2024

Note: An hyphen after a date means: 'ongoing' (e.g., 2016-: means 'Since 2016')

LINKS

Google Scholar: https://scholar.google.com/citations?hl=en&user=ygjUkGwAAAAJ

Scopus: https://www.scopus.com/authid/detail.uri?authorId=36615982700

ORCID: https://orcid.org/0000-0002-8428-7584

EDUCATION (DEGREES, FIELD OF STUDY, TITLES OF DISSERTATIONS/THESIS, DATES)

Ph.D. ETH Zürich - Switzerland, Doctorate: Rock Physics. Dissertation title: *Experimental characterization of reservoir rocks and geotechnical materials. low-frequency attenuation, ultrasonic velocities, and local pore pressure effects*, Mar 2009 – Apr 2013. *DOI: 10.3929/ethz-a-009900702;*

M.Sc. University of Padova - Italy, Master in Sciences: Geology, Technical Geology and Rock Physics. Thesis title: *Experimental study of flash heating and application to earthquake nucleation. (Studio sperimentale del coefficiente di attrito e della temperatura di flash durante lo scivolamento sismico).* Final evaluation: first-class degree (110/110 Laude), Oct 2005 - Dec 2008. [link]

B.Sc. University of Padova - Italy, Bachelor in Sciences: Geology. Final evaluation: first-class degree (110/110 Laude), Oct 2001 - Dec 2004.

ADVISORS

Post-Doc advisors: Prof. Giovanni Grasselli (University of Toronto, Canada) and Prof. Jean-Pierre Burg (ETH Zürich, Switzerland);

Ph.D. advisors: Dr. Luigi Burlini (passed on Dec 2009); Dr. Erik H. Saenger and Prof. Jean-Pierre Burg (all at ETH Zürich, Switzerland);

M.Sc. advisor: Prof. Giulio Di Toro, (University of Padova, Italy);

B.Sc. advisor: Prof. Antonio Galgaro, (University of Padova, Italy).

PROFESSIONAL REGISTRATIONS, LICENSURES, CERTIFICATIONS

2023-2033: **National Scientific qualification as associate in the Italian higher education system**, in the call 2021/2023 (Ministerial Decree n. 553/2021 and 589/2021) for the disciplinary field of 04/A2 - Structural geology, stratigraphy, sedimentology and

paleontology. (Academic Recruitment Field 04/A - Earth sciences, according to the national classification);

2018–2028: **National Scientific qualification as associate in the Italian higher education system**, in the call 2016/2018 (Ministerial Decree n. 1532/2016) for the disciplinary field of 04/A4 - Geophysics. (Academic Recruitment Field 04/A - Earth sciences, according to the national classification);

1998-: **Engineering Technician (Perito)** after the high-school degree in Electrical and Automation Engineering, Technical and Industrial Institute (Silvio De Pretto) Schio, Italy.

ACADEMIC EMPLOYMENT AND/OR APPOINTMENTS

2024-: **Associate Professor (Tenured)** at The University of Texas at Austin (TX), USA – Jackson School of Geosciences (JSG), Department of Earth and Planetary Sciences (EPS);

2016-2024: **Assistant Professor** of Geophysics at The University of Texas at Austin (TX), USA – Jackson School of Geosciences (JSG), Department of Earth and Planetary Sciences (EPS), (2016-2023: Department of Geological Sciences (DGS));

2017-2021: **Assistant Professor (zero-time appointment)** at the University of Toronto, Department of Civil Eng., Toronto, Canada;

2015: **Adjunct Faculty** at The University of Texas at Austin (TX), USA – JSG, DGS: 0% appointment;

2014-2015**: Post-Doctoral fellow** at The University of Toronto project granted by the Swiss National Scientific Foundation and The University of Toronto: “Experimental Rock Deformation under micro-CT - ERDμ,”: $100.000;

2014 Jan–2015 Dec: **Lecturer** at ETH Zürich (CH). Structural Geology and Tectonics group and Rock Deformation Laboratory: 0% appointment granted to access facilities;

2013 May–2013 Dec: **Post-Doctoral researcher** at ETH Zürich (CH) – Structural Geology and Tectonics group – Rock Deformation Laboratory, projects in collaboration with Exxon-Mobil and Petrobras: ~$500.000;

2011 Nov–2012 May: **Consultant** at the Institute of Geophysics of ETH Zürich (CH) (Prof. H. Maurer) and NAGRA – http://www.nagra.ch/: design and development of a multichannel acquisition system for seismic signals for GAST experiment in Grimsel Test Site (CH);

2011: **Consultant** for the Swiss Geophysical Commission (SGPK) (Dr. A. Zappone): design and development of a scientific instrument for the SAPHYR project;

PROFESSIONAL EMPLOYMENT

2016-2024: **Consultant** of Seismos, INC – Austin (TX);

2009: **Technical consultant** for Tecnopenta s.a.s. (IT) and Hydra s.r.l. (IT);

2004 Oct– 2009 Feb: **Commercial technician** at Tecnopenta s.a.s. (IT) – http://www.tecnopenta.com/;

2004 Oct–2005 Oct: **IT professional** at Land Technology & Services S.r.l –Treviso - http://www.ltsht.com/; development of a geological database for collecting geo-field data;

2000 Jul–2004 Sep: **Sub-agent of insurance** for AXA assicurazioni – Schio (IT);

1999 Jun– 2000 Jun: **Policeman** in Carabinieri Corps – Italy (military service).

RESEARCH

Experimental and Computational rock physics: Rheology of rocks and fluids, Attenuation of seismic waves, Digital rock physics; Earthquake nucleation and friction in rocks; Slow-slip events. **Sedimentology**: Genesis of caves and cave deposits.

My research on rock physics focuses on: **i) anelasticity and attenuation of seismic waves at low frequencies in rocks and fluids; ii) fluid pressure transients generated by stress; iii) friction coefficient during seismic slip, iv) permeability and ultrasonic velocities under high pressure and temperature conditions; iv) Digital Rock Physics**. My contribution to rock physics helps to improve the monitoring and **imaging of the subsurface and try to solve problems related to seismic monitoring, Earthquakes** (e.g., DOI: 10.1029/2023GL103696)**, subduction zones, volcanic areas, sequestration of CO_2, storage of hydrogen, and geothermal and hydrocarbon reservoirs**. My group at UT Austin has developed new Digital Rock Physics techniques (e.g., DOI: 10.1029/2019JB018680). I have been studying the effective complex elastic properties of rocks saturated with liquids containing bubbles. Studying multiphase fluids is important **to monitor volcanic edifices, seismogenic faults** and to **detect leakages of geological sequestrated gases**. My work is used by seismologists, vulcanologists, and rock physicists (e.g., DOI: 10.3389/feart.2022.963689, DOI: 10.1093/gji/ggz077, DOI: 10.1007/s00410-022-01900-1).

My research on cave sedimentology focuses on: **genesis of caves and speleothems, which are also controlled** by complex **interactions between fluids, rocks and life**. My work has been recognized important to understand the formation of helictites, DOI: 10.1016/B978-0-12-814124-3.00061-3.

At UT Austin I have created the UT Austin **Rock Deformation Laboratory**: a ~100 m^2 space where researchers can **perform measurements and experiments at different pressure and temperature conditions** to understand the chemo-physical behavior of rocks, **analyze** results (also in collaboration with other laboratories across campus), and **perform numerical simulations to upscale** the observations to larger subsurface domains. As a segue from my Post-Doc at UT Austin I have been combining **X-ray computed tomography** with **experimental rock physics**. In 2020 I was invited to present to the **1st ISRD Workshop by NSF RCN.** I routinely **design and develop laboratory apparatus** to conduct my experiments, and I utilize analytical and numerical methods to tackle the physics behind experimental observations (e.g., Sofi3D).

TEACHING

UT AUSTIN

Spring 2024:

GEO325G: **Computational Applications in the Geosciences**;

GEO371T: **GeoData** (new course co-taught with Prof. Tim Goudge);

Spring 2023:

GEO325G: **Computational Applications in the Geosciences**;

GEO371T and GEO391T: **Environmental and Geophysical monitoring**;

GEO114G: **Geophysics Colloquium** (organizer);

*Spring 2022**:***

GEO325G: **Computational Applications in the Geosciences**;

GEO369G and GEO396G: **Geophysical Measurements and Monitoring**;

Fall 2021:

GEO114G: **Geophysics Colloquium** (organizer);

*Spring 2021**:***

GEO325G: **Computational Applications in the Geosciences**;

GEO369G and GEO396G: **Geophysical Measurements and Monitoring**;

Fall 2020:

GEO114G: **Geophysics Colloquium** (organizer);

*Spring 2020**:***

GEO325G: **Computational Applications in the Geosciences**;

GEO369G and GEO396G: **Geophysical Measurements and Monitoring**;

Fall 2019:

GEO114G: **Geophysics Colloquium** (organizer);

Summer 2019:

GEO660: **Geology field camp** (4 days, principal instructor: Dr. Mark Helper);

*Spring 2019**:***

GEO325G: **Computational Applications in the Geosciences**;

GEO371T and GEO391T: **Geophysical Measurements and Monitoring**;

*Spring 2018**:***

GEO325G: **Computational Applications in the Geosciences** (co-taught with Prof. C. Wilson);

GEO371T and GEO391T: **Geophysical Measurements and Monitoring**;

*Spring 2017**:***

GEO468K: **Geophysics for Geological Sciences Majors;**

GEO371T and GEO391T: **Geophysical Measurements and Monitoring**;

*Spring 2016**:***

GEO468K: **Geophysics for Geological Sciences Majors.**

- In collaboration with Prof. Tim Goudge I have been devising and developing the new course “GeoData” that teaches students to collect, elaborate, analyze and display geoscience data.
- **I devised and developed the course "Geophysical Measurements and Monitoring" and "Environmental and Geophysical Monitoring,"** where students learn about **methodologies for environmental monitoring and how to program and use ARDUINO based sensors.** The development of this course was supported by a Faculty Innovation Grant that UT Austin granted in 2018.
- Starting from the course developed by Prof. C. Wilson, I further developed the course **Computational Applications in the Geosciences as it became required for all our undergraduate students:** using computational methods solved inMatlab I teach students how to tackle geological problems**.**

ETH ZÜRICH

2013: Lecturer of i) Experimental Rock Deformation and ii) Rock Physics;

2012: Lecturer of Experimental Rock Deformation;

2010–2011: Teaching assistant of the course: Experimental Rock Deformation.

PUBLICATIONS/PRESENTATIONS

Totals	*Totals since 2016*	
51	***30***	***Journal articles;***
34	***16***	***Extended abstracts;***
39	***31***	***Invited talks;***
102	***37***	***Conference abstracts.***

Past supervisor names are underlined; My name is reported in bold font; ******* *indicates a student that I supervised;* ***‡*** *indicates a student that I advised.*

JOURNAL ARTICLES

-UNDER REVIEW–

51) **Tisato, N.,** Spikes, K.T., Saxena, N., & Hofmann, R., Scattering and frequency effects of ultrasonic velocities on carbonates. *Journal of Geophysical Research - Solid Earth, (39 pages). [link]*

50) Mews, K. S., **Tisato, N.**, Rozhko, A. Y., Holt, R. M., & Lozovyi, S., Nonlinear elasticity in rocks: impact of saturation, stress, and wave-amplitude on harmonics in sedimentary rocks. *Journal of Geophysical Research - Solid Earth, (38 pages). [link]*

-2024–

49) **Tisato, N.,** Bland, C. D.*, Van Avendonk, H., Bangs, N., Garza, H., Alamoudi, O.*, Olsen, K., Gase, A. ‡, (2024). Permeability and Elastic Properties of Rocks From the Northern Hikurangi Margin: Implications for Slow-Slip Events. *Geophysical Research Letters, (11 pages). DOI: 10.1029/2023GL10Resear3696*

-2023–

48) Huber, M., Kovaleva, E., Rae, A., **Tisato, N.**, & Gulick S., (2023) Can Archean impact structures be discovered? A case study from Earth's largest, most deeply eroded impact structure. *Journal of Geophysical Research - Planets, (16 pages). DOI: 10.1029/2022JE007721*

47) Zhao, Q., **Tisato, N.**, Abdelaziz, A., Ha, J., & Grasselli, G., (2023) Numerical investigation of progressive damage and associated seismicity on a laboratory fault. *International Journal of Rock Mechanics and Mining Sciences, 167, (12 pages). DOI: 10.1016/j.ijrmms.2023.105392*

46) Conrad, E. M.*, **Tisato, N.**, Carpenter, B. M., & Di Toro, G. (2023) Influence of frictional melt on the seismic cycle: Insights from experiments on rock analog material. *Journal of Geophysical Research: Solid Earth, 128, (19 pages). DOI: 10.1029/2022JB025695*

-2022–

45) Di Martino, M. D. P., De Siena, L., & **Tisato, N.** (2022) Pore space topology controls ultrasonic waveforms in dry volcanic rocks. *Geophysical Research Letters, 49, (9 pages). DOI: 10.1029/2022GL100310*

44) Chen, X., Espinoza, D. N., **Tisato, N.**, & Flemings, P. B. (2022) Gas permeability, pore habit, and salinity evolution during methane hydrate dissociation in sandy sediments. *Energy & Fuels, 36, (pages 9080–9090). DOI: 10.1021/acs.energyfuels.2c01720*

43) Goldfarb, E. J.*, Ikeda, K.*, Ketcham, R. A., Prodanović, M., & **Tisato, N.** (2022) Predictive digital rock physics without segmentation. *Computers & Geosciences, 159, (12 pages). DOI: 10.1016/j.cageo.2021.105008*

-2021–

42) Pistone, M., Fife, J. L., **Tisato, N.**, Caricchi, L., Reusser, E., Ulmer, P., Mader K., & Marone F. (2021) Seismic attenuation during magma vesiculation: A combination of laboratory constraints and modeling. *Geophysical Research Letters, 48, (10 pages). DOI: 10.1029/2020GL092315*

41) **Tisato, N.,** Madonna, C., & Saenger, E. H. (2021) Attenuation of seismic waves in partially saturated Berea sandstone as a function of frequency and confining pressure. *Frontiers in Earth Science, 9, (17 pages). DOI: 10.3389/feart.2021.641177*

40) Ikeda, K.*, Subramaniyan, S., Quintal, B., Goldfarb, E. J.*, Saenger, E. H., & **Tisato, N.** (2021) Low-frequency elastic properties of a polymineralic carbonate: Laboratory measurement and digital rock physics. *Frontiers in Earth Science, 9, (15 pages). DOI: 10.3389/feart.2021.628544*

-2020–

39) Chen, X., Espinoza, D. N., Luo, J. S., **Tisato, N.**, & Flemings, P. B. (2020) Pore-scale evidence of ion exclusion during methane hydrate growth and evolution of hydrate pore-habit in sandy sediments. *Marine and Petroleum Geology, 117, (12 pages). DOI: 10.1016/j.marpetgeo.2020.104340*

38) Ikeda, K.*, Goldfarb, E. J.*, & **Tisato, N.** (2020) Calculating effective elastic properties of Berea sandstone using the segmentation-less method without targets. *Journal of Geophysical Research: Solid Earth, 125, (19 pages). DOI: 10.1029/2019JB018680*

37) Zhao, Q., Glaser, S. D., **Tisato, N.**, & Grasselli, G. (2020) Assessing energy budget of laboratory fault slip using rotary shear experiments and micro-computed tomography. *Geophysical Research Letters, 47, (9 pages). DOI: 10.1029/2019GL084787*

-2019–

36) Ramos, M. J.‡, Espinoza, D. N., Goldfarb, E. J.*, **Tisato, N.**, Laubach, S. E., & Torres-Verdín, C. (2019) Microstructural controls on elastic anisotropy of finely laminated Mancos Shale. *Geophysical Journal International, 216, (pages 991–1004). DOI: 10.1093/gji/ggy474*

35) Faccenda, M., Ferreira, A. M. G., **Tisato, N.**, Lithgow-Bertelloni, C., Stixrude, L., & Pennacchioni, G. (2019) Extrinsic elastic anisotropy in a compositionally heterogeneous Earth's mantle. *Journal of Geophysical Research: Solid Earth, 124, (pages 1671–1687). DOI: 10.1029/2018JB016482*

34) Spikes, K. T., **Tisato, N.**, Hess, T. E., & Holt, J. W. (2019) Comparison of geophone and surface deployed DAS seismic data. *GEOPHYSICS, 84, (pages A25-A29). DOI: 10.1190/geo2018-0528.1*

-2018–

33) Zhao, Q.*, **Tisato, N**., Kovaleva, O., & Grasselli, G. (2018) Direct observation of faulting by means of rotary shear tests under X-ray micro-computed tomography. *Journal of Geophysical Research: Solid Earth, 123, (pages 7389– 7403). DOI: 10.1029/2017JB015394*

32) Chapman, S., Quintal, B., Holliger, K., Baumgartner, L., & **Tisato, N.** (2018) Laboratory measurements of seismic attenuation and Young's modulus dispersion in a partially and fully water-saturated porous sample made of sintered borosilicate glass: *Geophysical Prospecting , 66, (pages 1384-1401). DOI: 10.1111/1365-2478.12643*

31) De Waele, J., D'Angeli, I. M., Bontognali, T., Tuccimei, P., Scholz, D., Jochum, K. P., A. Columbu, Bernasconi, S.M., Fornos, J.J., Gonzales, E.R.G. & **Tisato, N.** (2018) Speleothems in a north Cuban cave register sea-level changes and Pleistocene uplift rates, *Earth Surface Processes and Landforms, 43, (pages 2313– 2326). DOI: 10.1002/esp.4393*

-2017-

30) De Siena, L., Chiodini, G., Vilardo, G., Del Pezzo, E., Castellano, M., Colombelli, S., **Tisato, N.**, & Ventura, G. (2017) Source and dynamics of a volcanic caldera unrest: Campi Flegrei, 1983–84, *Scientific Reports, 7, (13 pages). DOI: 10.1038/s41598-017-08192-7*

29) Lupi, M., Frehner, M., Weis, P., Skelton, A., Saenger, E.H., **Tisato, N.**, Geiger, S., Chiodini, G., & Driesner, T. (2017) Regional earthquakes followed by delayed ground uplifts at Campi Flegrei Caldera, Italy: Arguments for a causal link. *Earth and Planetary Science Letters, 474, (pages 436–446). DOI: 10.1016/j.epsl.2017.07.006*

28) Zhao, Q.*, **Tisato, N.**, & Grasselli, G. (2017) Rotary shear experiments under X-ray micro-computed tomography, *Review of Scientific Instruments, 88, (10 pages). DOI: 10.1063/1.4974149*

27) De Waele, J., D'Angeli, I.M., **Tisato, N.,** Tuccimei, P., Soligo, M., Joaquin, G., Gines, A., Fornos, J.J., Villa, I.M., Esteban, G.G., Bernasconi, S.M., & Bontognali, T.R.R. (2017) Coastal uplift rate at Matanzas (Cuba) inferred from MIS5e phreatic overgrowths on speleothems. *Terra Nova, 29, (pages 98–105). DOI: 10.1111/ter.12253*

26) Chapman, S., Quintal, B., **Tisato, N.**, & Holliger, K. (2017) Frequency scaling of seismic attenuation in rocks saturated with two fluid phases. *Geophysical Journal International, 208, (pages 221–225), DOI: 10.1093/gji/ggw387*

-2016-

25) Chapman, S., **Tisato, N.,** Quintal, B., & Holliger, K. (2016) Seismic attenuation in partially saturated Berea sandstone submitted to a range of confining pressures, *Journal of Geophysical Research: Solid Earth, 121, (pages 1664–1676), DOI: 10.1002/2015JB012575*

24) Sun, L. F., Milkereit, B., & **Tisato, N.** (2016) Analysis of velocity dispersion using full-waveform multichannel sonic logging data: A case study, *Geophysical Prospecting, 64, (pages 1016–1029), DOI: 10.1111/1365-2478.12410*

23) Biryukov, A., **Tisato, N.**, & Grasselli, G. (2016) Attenuation of elastic waves in bentonite and monitoring of radioactive waste repositories. *Geophysical Journal International, 205, (pages 105–121), DOI: 10.1093/gji/ggv548*

22) Bontognali, T. R. R., D'Angeli, I.M., **Tisato, N.**, Vasconcelos, C., Bernasconi, S.M., Gonzales, E.R.G., & De Waele, J. (2016) Mushroom speleothems: Stromatolites that formed in the absence of phototrophs. *Frontiers in Earth Science, 4, (8 pages). DOI: 10.3389/feart.2016.00049*

-2015-

Tisato N., Torriani S., Monteaux S., Sauro F., De Waele J., Tavagna M. L., D'Angeli I. M., Chailloux D., Renda D., Eglinton T., Bontognali T. R. R. (2015) Microbial mediation of complex subterranean mineral structures. *Scientific Reports, 5, (10 pages). DOI: 10.1038/srep15525*

Zhao, Q.*, **N. Tisato**, G. Grasselli, O. K. Mahabadi, A. Lisjak, and Q. Liu (2015) Influence of *in situ* stress variations on acoustic emissions: a numerical study. *Geophysical Journal International, 203, (pages 1246–1252). DOI: 10.1093/gji/ggv370*

Goodfellow, S. D., **N. Tisato**, M. Ghofranitabari, M. H. B. Nasseri, and R. P. Young (2015) Attenuation Properties of Fontainebleau Sandstone During True-Triaxial Deformation using Active and Passive Ultrasonics. *Rock Mechanics and Rock Engineering, 48, (pages 2551–2566). DOI: 10.1007/s00603-015-0833-8*

Tisato N., B. Quintal, Chapman S., Y. Podladchikov, J-P. Burg (2015) Bubbles attenuate seismic waves: first experimental evidence, *Geophysical Research Letters., 42, (pages 3880-3887). DOI: 10.1002/2015GL063538*

D'Angeli, I. M., J. De Waele, O. C. Melendres, N. Tisato, F. Sauro, E. R. G. Gonzales, S. M. Bernasconi, S. Torriani, and T. R. R. Bontognali (2014) Genesis of folia in a non-thermal epigenic cave (Matanzas, Cuba) *Geomorphology, 228, (pages 526-535). DOI: 10.1016/j.geomorph.2014.09.006*

-2014-

Biryukov, A., **N. Tisato**, and G. Grasselli (2014) Workflow to numerically reproduce laboratory ultrasonic datasets. *Journal of Rock Mechanics and Geotechnical Engineering*, *6, (pages 582–590), DOI: 10.1016/j.jrmge.2014.10.002*

Tisato, N., and B. Quintal (2014) Laboratory measurements of seismic attenuation in sandstone: Strain versus fluid saturation effects. *Geophysics, 79, (pages WB9–WB14), DOI: 10.1190/geo2013-0419.1*

Subramaniyan, S., B. Quintal, **N. Tisato**, E. H. Saenger, and C. Madonna (2014) An overview of laboratory apparatuses to measure seismic attenuation in reservoir rocks. *Geophysical Prospecting, 62, (pages 1211–1223), DOI: 10.1111/1365-2478.12171*

Tisato N., Quintal B., Chapman S., Madonna C., Subramaniyan S., Frehner M., Saenger E.H., Grasselli G., Seismic attenuation in partially saturated rocks: recent advances and future directions. *The Leading Edge, 33, (pages 640–646), DOI: 10.1190/tle33060640.1*

Mecchia, M., F. Sauro, L. Piccini, J. De Waele, L. Sanna, **N. Tisato**, J. Lira, and F. Vergara (2014) Geochemistry of surface and subsurface waters in quartz-sandstones: significance for the geomorphic evolution of tepui table mountains (Gran Sabana, Venezuela). *Journal of Hydrology, 511, (pages 117–138), DOI: 10.1016/j.jhydrol.2014.01.029*

Kuteynikova, M., **N. Tisato**, R. Jänicke, and B. Quintal (2014) Numerical modeling and laboratory measurements of seismic attenuation in partially saturated rock. *Geophysics, 79, (pages L13–L20), DOI: 10.1190/geo2013-0020.1*

Sauro, F., **N. Tisato**, J. De Waele, S. M. Bernasconi, T. R. R. Bontognali, and E. Galli (2014) Source and genesis of sulphate and phosphate-sulphate minerals in a quartz-sandstone cave environment, edited by N. Sheldon. *Sedimentology, 61, (pages 1433-1451). DOI: 10.1111/sed.12103*

-2013-

Tisato N., and Quintal B. (2013) Measurements of seismic attenuation and transient fluid pressure in a partially saturated Berea sandstone: Evidence of fluid flow in the mesoscopic scale, *Geophysical Journal International, 195, (pages 342-351). DOI: 10.1093/gji/ggt259*

Tisato N. and Marelli S. (2013) Laboratory measurements of the longitudinal and transverse wave velocities of compacted bentonite as a function of water content, temperature and confining pressure, *Journal of Geophysical Research: Solid Earth, 118, (pages 3380-3393). DOI: 10.1002/jgrb.50252*

Sala P., Frehner M., **Tisato N.** & Pfiffner O.A. (2013) Building a 3D near-surface geological and petrophysical model based on borehole data – A case-study from Chémery, Paris Basin, France. *AAPG Bulletin, 97, (pages 1303-1324). DOI: 10.1306/02261312120*

Madonna, C., B. Quintal, M. Frehner, B. S. G. Almqvist, **N. Tisato**, M. Pistone, F. Marone, and E. H. Saenger (2013) Synchrotron-based X-ray tomographic microscopy for rock physics investigations. *Geophysics, 78, (pages D53–D64), DOI: 10.1190/geo2012-0113.1*

Madonna, C., and **N. Tisato** (2013) A new Seismic Wave Attenuation Module to experimentally measure low-frequency attenuation in extensional mode*, Geophysical Prospecting, 61, (pages 302-314). DOI: 10.1111/1365-2478.12015*

-2012-

Tisato, N., and C. Madonna (2012) Attenuation at low seismic frequencies in partially saturated rocks: Measurements and description of a new apparatus, *Journal of Applied Geophysics*, *86, (pages 44–53). DOI: 10.1016/j.jappgeo.2012.07.008*

Tisato, N., F. Sauro, S. M. Bernasconi, R. H. C. Bruijn, and J. De Waele (2012) Hypogenic contribution to speleogenesis in a predominant epigenic karst system: A case study from the Venetian Alps, Italy, *Geomorphology, 151-152, (pages 156–163). DOI: 10.1016/j.geomorph.2012.01.025*

Tisato, N., G. Di Toro, N. De Rossi, M. Quaresimin, and T. Candela (2012) Experimental investigation of flash weakening in limestone, *Journal of Structural Geology, 38, (pages 183-199). DOI: 10.1016/j.jsg.2011.11.017*

-2011 (1)-

Quintal, B., M. Frehner, C. Madonna, **N. Tisato**, M. Kuteynikova, and E. H. Saenger (2011) Integrated numerical and laboratory rock physics applied to seismic characterization of reservoir rocks, *The Leading Edge, 30, (pages 1360-1367). DOI: 10.1190/1.3672480*

EXTENDED ABSTRACTS (PEER REVIEWED)

34) Almeshari, S.*, **Tisato, N.,** Wood, C. * (2024) Evaluating the Impact of CO2 Mineralization on the Elastic Properties of Ultramafic Rocks. In International Meeting for Applied Geoscience & Energy Expanded Abstracts. Houston: SEG and AAPG. [link]

33) Alamoudi, O.*, & **Tisato, N.** (2021) Fracture detection and property estimation in microCT images. In First International Meeting for Applied Geoscience & Energy Expanded Abstracts (pp. 2348–2352). Denver, CO and virtual: Society of Exploration Geophysicists. DOI: 10.1190/segam2021-3584210.1

32) Goldfarb, E. J.*, Ikeda, K.*, & **Tisato, N.** (2021) Evaluating samples smaller than the representative elementary volume (REV). In First International Meeting for Applied Geoscience & Energy Expanded Abstracts (pp. 2373–2377). Denver, CO and virtual: Society of Exploration Geophysicists. DOI: 10.1190/segam2021-3594787.1

31) Ikeda, K.*, Goldfarb, E.*, & **Tisato, N.** (2020) A new apparatus for measuring low-frequency attenuation: Low-Frequency Module. In SEG Technical Program Expanded Abstracts 2020 (pp. 2560–2564). Virtual: Society of Exploration Geophysicists. DOI: 10.1190/segam2020-3427119.1

30) Zhao, Q.*, Glaser, S. D., **Tisato, N.**, & Grasselli, G. (2019, August 28) Assessing Energy Budget of Laboratory Fault Slip Using Quantitative Micro-CT Image Analysis. Paper presented at the 53rd U.S. Rock Mechanics/Geomechanics Symposium, New York City, New York, June 2019. [link]

29) Goldfarb, E. J.*, **Tisato, N.**, Ikeda, K.*, Kerans, C., Ketcham, R. A., Gomez, K., & Boone, J. M. (2019) Numerically estimating rock frame properties of a mixed calcite and dolomite hand sample using Computed Tomography (CT). In SEG Technical Program Expanded Abstracts 2019 (pp. 3558–3562). San Antonio, Texas: Society of Exploration Geophysicists. DOI: 10.1190/segam2019-3215964.1

28) Ikeda, K.*, Goldfarb, E. J.*, & **Tisato, N**. (2019) Elastic properties of Berea sandstone using inversion-assisted segmentation-less digital rock physics. In SEG Technical Program Expanded Abstracts 2019 (pp. 3698–3702). San Antonio, Texas: Society of Exploration Geophysicists. DOI: 10.1190/segam2019-3215840.1

27) McCann, M.*, **Tisato, N.**, & Spikes, K. (2019) Low-frequency attenuation measurements of fluids. In SEG Technical Program Expanded Abstracts 2019 (pp. 3598–3602). San Antonio, Texas: Society of Exploration Geophysicists. DOI: 10.1190/segam2019-3193361.1

26) **Tisato, N.,** Duranti, L., & Madonna, C. (2018) Measurements of seismic-wave attenuation and dynamic pore pressure in Berea sandstone. In SEG Technical Program Expanded

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25) Goldfarb, E. J.*, Ikeda, K.*, & **Tisato, N.** (2018) Constraining the effect of image resolution in digital rock physics without segmentation. In SEG Technical Program Expanded Abstracts 2018 (pp. 3688–3692). Anaheim, California: Society of Exploration Geophysicists. DOI: 10.1190/segam2018-2997871.1

24) Quintal B., S. Chapman, **N. Tisato**, and Josef Paffenholz (2017) Numerical analysis of laboratory attenuation measurements, Sixth Biot Conference on Poromechanics (pp. 1642-1649). DOI: 10.1061/9780784480779.203

23) Goldfarb E.*, Ikeda K.*, **Tisato N.** (2017) Segmentationless digital rock physics using different effective medium theories. In SEG Technical Program Expanded Abstracts 2017 (Vols. 1–0, pp. 3908–3913). Society of Exploration Geophysicists. DOI: 10.1190/segam2017-17792957.1

22) Ikeda K.*, Goldfarb E.*, **Tisato N.** (2017) Static elastic properties of Berea sandstone by means of segmentation-less digital rock physics. In SEG Technical Program Expanded Abstracts 2017 (Vols. 1–0, pp. 3914–3919). Society of Exploration Geophysicists. DOI: 10.1190/segam2017-17789805.1

21) **Tisato N.,** Spikes K (2016) Computation of effective elastic properties from digital images without segmentation. In SEG Technical Program Expanded Abstracts 2016 (Vols. 1–0, pp. 3256–3260). Society of Exploration Geophysicists. DOI: 10.1190/segam2016-13947820.1

20) **Tisato N.,** Zhao Q.*, Grasselli G. (2016) Experimental Rock Deformation under Micro-CT - Two New Apparatuses for Rock Physics. In 78th EAGE Conference and Exhibition 2016 (pp. 1–5). Online,: European Association of Geoscientists & Engineers. DOI: 10.3997/2214-4609.201601225

19) **Tisato N.,** Zhao Q.*, Grasselli G. (2016) Experimental rock physics under micro-CT. In SEG Technical Program Expanded Abstracts 2016 (Vols. 1–0, pp. 3251–3255). Society of Exploration Geophysicists. DOI: 10.1190/segam2016-13949603.1

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Tisato N., Chapman S., Zhao Q.*, Grasselli G., Quintal B. (2015) Seismic wave attenuation in rocks saturated with bubbly liquids: Experiments and numerical modeling. In SEG Technical Program Expanded Abstracts 2015 (Vols. 1–0, pp. 3254–3258). Society of Exploration Geophysicists. DOI: 10.1190/segam2015-5902520.1

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Tisato N., Grasselli G., Quintal B., Podladchikov Y. (2014) Seismic wave attenuation in fluid-saturated rock as result of gas dissolution. In SEG Technical Program Expanded Abstracts 2014 (Vols. 1–0, pp. 1985–1990). Society of Exploration Geophysicists. DOI: 10.1190/segam2014-0926.1

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Tisato N., Madonna C., Saenger E. H. (2013) Seismic wave attenuation for partially saturated sandstone as a function of confining pressure. In SEG Technical Program Expanded Abstracts 2013 (Vols. 1–0, pp. 2626–2631). Society of Exploration Geophysicists. DOI: 10.1190/segam2013-0301.1

Madonna C., Frehner M., **Tisato N.**, Saenger E. H., Sell K., Kersten M., Quintal B (2013) Synchrotron-based X-ray tomographic images: Raw data, segmentation techniques, and their influence on estimated rock properties. In SEG Technical Program Expanded Abstracts 2013 (Vols. 1–0, pp. 2691–2695). Society of Exploration Geophysicists. DOI: 10.1190/segam2013-0598.1

Saenger, E. H., Madonna, C., Quintal, B., Frehner, M., Almqvist, B. S. G., **Tisato, N.,** & Marone, F. (2013). Synchrotron-based X-ray Tomographic Microscopy for Rock Physics Investigations. DOI: 10.3997/2214-4609.20130344

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Tisato N., Quintal B. (2012) Measuring and modeling transient fluid pressure in a partially saturated rock sample. In SEG Technical Program Expanded Abstracts 2012 (Vols. 1–0, pp. 1–5). Society of Exploration Geophysicists. DOI: 10.1190/segam2012-1377.1

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Kuteynikova M., **Tisato N.,** Rubino G., Quintal B. (2012) Numerical and laboratory measurements of seismic attenuation in partially saturated rocks. In SEG Technical Program Expanded Abstracts 2012 (Vols. 1–0, pp. 1–6). Society of Exploration Geophysicists. DOI: 10.1190/segam2012-0967.1

Madonna C., **Tisato N.,** Delle Piane C., Saenger E. H. (2011) Further developments in measurement of low frequency seismic attenuation in laboratory. In SEG Technical Program Expanded Abstracts 2011 (Vols. 1–0, pp. 2114–2118). Society of Exploration Geophysicists. DOI: 10.1190/1.3627627

Tisato N., Madonna C., Artman B., Saenger E. H. (2011) Low frequency measurements of seismic wave attenuation in Berea sandstone. In SEG Technical Program Expanded Abstracts 2011 (Vols. 1–0, pp. 2277–2281). Society of Exploration Geophysicists. DOI: 10.1190/1.3627661

Tisato N., Madonna C., Artman B., Saenger E. H. (2011) Laboratory Investigation of Attenuation Value and Mechanisms in Fluid Saturated Rock. EAGE. DOI: 10.3997/2214-4609.20149063

Madonna C., **Tisato N.,** Artman B., Saenger E. H. (2011) Laboratory Measurements of Seismic Attenuation from 0.01 to 100 Hz. EAGE. DOI: 10.3997/2214-4609.20149425

Madonna C., **Tisato N.**, Boutareaud S., Mainprice D. (2010) A new laboratory system for the measurement of low frequency seismic attenuation. In SEG Technical Program Expanded Abstracts 2010 (Vols. 1–0, pp. 2675–2680). Society of Exploration Geophysicists. DOI: 10.1190/1.3513397

INVITED TALKS

31) 2024, January 31: **Heiland lecture, Colorado School of Mines, Department of Geophysics, Golden (CO):** *Earthquakes through the lens of rock physics: from analog materials in the lab to rocks in the field*;

30) 2023, October 11: **CEGA Gussow 2023 – Geomechanics for Sustainable Energy Development – Banff, AB (Canada) October 10-12:** *Permeability and Fracture Healing Control Seismicity: An Experimental Study Combining Rock Physics and CT Scanning*;

29) 2023, May 24: **University of Milan - Bicocca**: *Fluids and Rock Physics;*

28) 2023, April 21: **Computational Infrastructure Geodynamics (CIG):** *Capturing co-seismic fault deformation and pseudotachylyte formation to unveil earthquake physics;*

27) 2022, December 7: **Geophysical Society of Houston - Texas:** *From Experimental to Digital Rock Physics: Low-Frequency Elastic Properties and Segmentation-less Methods;*

26) 2022, May 13: **University of Auckland (NZ)**: *A study of the Hikurangi subduction zone from the analysis of rock properties and marine seismic data: the CRUSH project;*

25) 2021, October 12: **ARMA student chapter** University of Toronto, Monthly Lecture Series: *Attenuation of Seismic waves;*

24) 2021, May 27: **Center for Planetary Systems Habitability Seminar, UT Austin, TX:** *The Biotic Influence on Speleothem Morphology (by Carole Lakrout and Nicola Tisato);*

23) 2021, March 2: **Michigan State University** – (Invited by Prof. Min Chen): *Attenuation of seismic waves in saturated rocks;*

22) 2020, September 3: **Energy Resources and Petroleum Eng. Workshop** - ANPERC – King Abdullah University for Science and Technology: *Rock Physics: reservoir characterization and monitoring;*

21) 2020, Jun 18-19: **1st ISRD-RCN Workshop -** Cornell High Energy Synchrotron Source (CHESS): *Rotary shear fault slip visualized by micro-tomography (recording at: https://www.isrdrcn.org/workshops/chess-workshop-agenda/);*

20) 2019, October 15: **University of Mainz (DE)**: *Attenuation of seismic waves;*

19) 2018, October 23: **INGV – Rome**: *Attenuation of seismic waves;*

18) 2018, October 4: **University of Oklahoma**, Shell Colloquium: *Attenuation of seismic waves in partially saturated rocks;*

17) 2018, October 4: **University of Oklahoma**, Lunch'n learn: *Bubbles and seismic waves;*

16) 2019, July 4: **ENI Milan** (IT): *Attenuation of seismic waves;*

15) 2019, April 11: **IN-TIME RISE Workshop on Geochronology and Mars Exploration** - Austin, TX (organizer Prof. Liz Catlos): *Hidden life in caves: the bio-mediated mineral deposits of Asperge cave (France) and Breezeway Cave (Colorado);*

14) 2018, May 30: **Equinor** (ex Statoil) – Austin Texas: *Attenuation of seismic waves in partially saturated rocks;*

13) 2018, May 24: **Bureau of Economic Geology at UT Austin**: *Attenuation of seismic waves in partially saturated rocks**;***

12) 2017, September 29: **SEG general meeting post-workshop W14** (Evidence and understanding of frequency and scale dependencies of rock properties: Fabric, textures and rock physics modeling at reservoir scale): *Seismic wave attenuation in nearly fully saturated sandstones;*

11) 2017, June 27: **University of Toronto Dept. of Geological Sciences**: *Segmentation-less digital rock physics: rock properties from CT imagery;*

10) 2017, June 21: **Keynote Talk at the workshop "Improved reservoir characterization through rock physics and geomechanics"** organized by Dept. of Civil Eng. University of Toronto: *Rock physics under micro-CT;*

9) 2017, June 14: **University of Toronto Dept. of Civil Eng**: *Viscoelasticity of rocks;*

8) 2017, May 1: **Soft Rock Seminar at UT Austin**: *Viscoelastic Properties of Montmorillonite and Monitoring of Nuclear Waste Repositories;*

7) 2017, April 20: **Texas Geophysical Society**: *Viscoelastic Properties of Montmorillonite and Monitoring of Nuclear Waste Repositories;*

6) 2016, December 7: **Geophysical Society of Houston**: *Seismic Wave Attenuation and Dispersion in Saturated Rocks;*

5) 2016, September 16: **Institute of Geophysics at UT Austin** – The University of Texas at Austin: *Viscoelasticity of Rocks;*

4) 2016, July 19: **INGV** – Rome (IT): *Viscoelasticity of Rocks*;

3) 2016, July 5: **University of Perugia** (IT), Department of Geological Sciences: *Viscoelasticity of Rocks;*

2) 2016, April 20: **EGU general meeting** – Vienna (AU): *Viscoelasticity of multiphase fluids: future directions.*

1) 2016, April 19: **EGU general meeting** – Vienna (AU): *Bubbles attenuate elastic waves at seismic frequencies;*

2015, February 23: **ExxonMobil** Corporate Strategic Research (CSR) laboratory: *Viscoelasticity of saturated sandstones;*

2015, February 11: Department of Geosciences - **Virginia Tech**: *How rock-physics can contribute to ensuring a reliable and sustainable energy system;*

2015, February 10: Department of Geosciences - **Virginia Tech**: *The Water-Energy Nexus – Mapping subsurface gas-bubbles;*

2014, March 18: Institute of Geophysics – **University of Toronto**: *Seismic Attenuation at Low Frequencies in Partially Saturated Rocks;*

2013, September 5: **Schlumberger** Stavanger Research Center (Norway): *Low-frequency attenuation, ultrasonic velocities and local pore pressure effects: overview on part of my research in the last four years;*

2012, December 7: **TOTAL** - Pau (Fr): *Measuring and understanding seismic wave attenuation at 'low' frequencies;*

2012, November 22: **INGV**- Rome (IT): *Measuring and understanding seismic wave attenuation at 'low' frequencies;*

2012, May 4: Institute of Geophysics – **University of Lausanne:** *Attenuation at low frequencies in partially saturated rocks.*

CONFERENCE ABSTRACTS

37) Morales, E.*, **Tisato, N.** (2023)**:** Understanding the Methods Used to Analyze the Dripping Rates at Inner Space Caverns. AGU Fall meeting – San Francisco.

36) **Tisato, N.,** Conrad, E. M.*, Carpenter, B., Reches Z., Di Toro, G. (2023): The Influence of Friction Melt on co-Seismic Slip: Experiments Using an Energy-Controlled Rotary-Shear Machine. AGU Fall meeting – San Francisco.

35) Alamoudi, O.*, **Tisato, N.,** Van Avendonk, H., Garza, H., Bangs, N. (2023): Permeability healing of clay-rich sedimentary rocks from the Hikurangi margin: a possible mechanism to explain slow-slip event recurrence. AGU Fall meeting – San Francisco.

34) **Tisato, N.** (2023): Permeability and Fracture Healing Control Seismicity: An Experimental Study Combining Rock Physics and CT Scanning**.** CEGA Gussow 2023 – Geomechanics for Sustainable Energy Development – Banff, AB (Canada) October 10-12.

33) Alamoudi, O.*, and **Tisato, N.**, (2023): Permeability and fracture evolution with confining pressure: an experimental study utilizing X-ray computed tomography and pulse-decay permeability measurements. Tomography for Scientific Advancement - North America (ToScANA) – Austin.

32) **Tisato, N.**, Bland, C.*, Van Avendonk, H., Bangs, N., & Gase, A.‡ (2022) Insights into the style of deformation in the Hikurangi subduction zone from rock physics measurements: elastic properties, permeability, and fracture healing. AGU Fall meeting - Chicago.

31) Huanyu Wu, Qi Zhao and **Nicola Tisato** (2022) Postseismic Relaxation Mechanisms of a Granular Fault: Laboratory Experiment and Numerical Simulation. AGU Fall meeting - Chicago.

30) Lakrout C. A.*, Jones N. T, **Tisato N.** (2022) Relating Unique Cave Structures to Micro-Biomes, LPI Contributions 2678, 2591, Houston, TX.

29) MDP Di Martino, L De Siena, **N Tisato** (2022) The role of pore space topology on ultrasonic wave propagation in volcanic rocks, EGU 2022, Vienna, Austria.

28) E.M. Conrad*, **N. Tisato**, BM Carpenter (2021) Experimental Insights into Melt Influenced Fault Behavior, AGU Fall Meeting 2021

27) **Tisato, N.**, & Di Toro, G. (2021) Flash Heating and Weakening inferred from Thermal Imaging of High-Speed Rotary Shear Experiments, 2021, MR32A-06. Presented at the AGU Fall Meeting Abstracts.

26) Bland, C.*, **Tisato, N**., Van Avendonk, H., Bangs, N., & Gase, A.‡ (2021) Elastic Properties and Permeability of Hikurangi Margin Rocks as a Function of Stress, Saturation, and the Presence of Fractures, 2021, MR45B-0097. Presented at the AGU Fall Meeting Abstracts.

25) Conrad, E. M.*, **Tisato, N.**, Di Toro, G., Carpenter, B. M., & Faccenna, C. (2020) New data on the stick-slip mechanics of seismogenic faults from rotary shear experiments, 2020, MR015-0011. Presented at the AGU Fall Meeting Abstracts (Conrad has won an OSPA)

24) Jin, Z.‡, & **Tisato, N.** (2020) Measurements of Seismic Wave Attenuation in Bubbly Liquids: Wiged Mechanism, 2020, H015-08. Presented at the AGU Fall Meeting Abstracts.

23) C.A. Lakrout*, E.J. Goldfarb, T.R.R.*,* Bontognali, and **N. Tisato** (2020) Biotic influence in speleothems morphology, 3rd International Planetary Caves Conference scheduled for February 18–21, 2020 at Southwest Research Institute (SwRI) San Antonio (TX) https://www.hou.usra.edu/meetings/3rdcaves2020/

22) Koenigs, B., Miller, N. R., **Tisato, N.**, Tremaine, D. M. (2019) Development of a Speleothem-Analogue Drip Sensor American Geophysical Union, Fall Meeting 2019, abstract #PP51F-1424

21) Harbord, C., **Tisato, N.,** Spagnuolo, E. Di Stefano, G. Di Toro (2019) A new apparatus to study visco-elastic properties in large displacement experimental faults, American Geophysical Union, Fall Meeting 2019, abstract #MR23C-0115

20) Goldfarb, E. J.*, Eckley, S. A., Ikeda, K.*, Ketcham, R. A., Alamoudi, O._*, **Tisato, N.** (2019) A Novel Way to Estimate Wave Speeds of Extraterrestrial Rocks. American Geophysical Union, Fall Meeting 2019, abstract #A21S-2802

19) Eric Goldfarb*, Logan Schmidt, Ken Ikeda*, Omar Alamoudi*, Daniella Rempe, and **Nicola Tisato**, (2019) Fractured Bedrock Hydrogeologic Characterization Using Digital Rock Physics, ACE AAPG meeting, San Antonio (TX)

18) Ken Ikeda*, Eric Goldfarb*, **Nicola Tisato**, (2019) Convolutional Neural Networks for Semantic Segmentation of Micro-Pores in SEM Based Images of Shales, ACE AAPG meeting, San Antonio (TX)

17) Ken Ikeda*, Shankar Subramaniyan, Beatriz Quintal, Erik Saenger, Eric J Goldfarb* and **Nicola Tisato**, (2018) Numerical and Laboratory Study of Low-frequency Elastic Properties of Limestone, AGU fall meeting, MR23A-01.

16) Xiongyu Chen, Nicolas Espinoza, **Nicola Tisato** and Peter B Flemings, (2018) X-ray micro-CT observation of methane hydrate growth and dissociation in sandy sediments, AGU Fall meeting, H41K-2231

15) Eric J Goldfarb*, Ken Ikeda*, Richard A Ketcham and **Nicola Tisato**, (2018) Estimating Properties from Millimetric Sized Rock Cuttings Using Micro Computed Tomography (CT) AGU Fall meeting, H41K-2214.

14) Manuele Faccenda, Ferreira, **Nicola Tisato**, Carolina R Lithgow-Bertelloni, Lars P Stixrude, and Giorgio Pennacchioni, (2018) Can compositional mantle heterogeneities be detected with seismic anisotropy? AGU Fall meeting, DI33A-02

13) Harbord, C., Di Toro, G., Spagnuolo, E., & **Tisato, N.** (2018) A new module designed to study seismic attenuation in large displacement experimental faults, 2018, T11F-0223. Presented at the AGU Fall Meeting Abstracts.

12) Q. Zhao*, **N. Tisato**, G. Grasselli, S. D. Glaser, (2017) Rotary shear test under X-ray microcomputed tomography, 52nd ARMA Symposium, Seattle (Wa)"

11) De Siena L, Chiodini G, Vilardo G, Del_Pezzo E, Castellano M, Colombelli S, **Tisato N,** Ventura G (2017) 4D imaging of the seism-geochemical dynamics leading to recent Campi Flegrei unrest. In: EGU General Assembly, 28/4/17, Vienna, Austria.

10) Ikeda K.*, Goldfarb E.*, **Tisato N** (2017) Calculating Effective Elastic Properties of Berea Sandstone Using Segmentation-less Method without Targets. In: AGU Fall Meeting, 15/12/17, New Orleans, USA.

9) Goldfarb E*, Ikeda K*, **Tisato N** (2017) Changes in Ultrasonic Velocity from Fluid Substitution, Calculated with Laboratory Methods, Digital Rock Physics, and Biot Theory. In: AGU Fall Meeting, 16/12/17, New Orleans, USA.

8) Lupi M, Frehner M, Weis P, Skelton A, Saenger E, **Tisato N**, Geiger S, Chiodini G, Driesner T (2017) Delayed inflation triggered by regional earthquakes at Campi Flegrei Caldera, Italy. In: AGU Fall Meeting, 15/12/17, New Orleans, USA.

7) **Tisato N**, Ikeda K*, Goldfarb E* (2017) Segmentation-less Digital Rock Physics. In: AGU Fall Meeting, 14/12/17, New Orleans, USA.

6) De Siena L, Chiodini G, Vilardo G, Del_Pezzo E, Castellano M, Colombelli S, **Tisato N**, Ventura G (2017) Seismic imaging of the hot source of Campi Flegrei unrest. In: EGU General Assembly, 26/4/17, VIenna, Austria.

5) **Tisato N**, Cordonnier B, De Siena L, Lavier L, Di Toro G (2017) Torque controlled rotary-shear experiments reveal pseudotachilites formation-dynamics and precursor events. In: EGU General Assembly, 27/4/17, Vienna, Austria.

4) **Tisato N**, Goodfellow S D, Moulas V, Di Toro G, Young P, Grasselli G (2016) Acoustic emissions in rock deformation experiments under microCT. In: EGU general meeting, 04/15/16, Vienna, Austria.

3) **Tisato N**, Quintal B, Chapman S, Podladchikov Y, Burg J-P (2016) Bubbles attenuate elastic waves at seismic frequencies. In: EGU general meeting, 04/15/16, Vienna, Austria (Invited).

2) Chapman S, Quintal B, **Tisato N**, Holliger K (2016) The frequency scaling of seismic attenuation measured in a two phase saturated rock. In: SEG AGU Workshop Upper Crust Physics of Rocks, 07/13/16, Hilo, USA.

1) **Tisato N**, Kyle Spikes, Farzam Javadpour (2016) Viscoelasticity of multiphase fluids future directions. In: EGU general meeting, 04/15/16, Vienna, Austria (Invited).

Tisato N, Quintal B, Chapman S, Podladchikov Y, Grasselli G, Burg J-P (2015) Bubbles cause seismic wave attenuation Laboratory measurements and numerical simulations. In: EGU general meeting, 04/17/15, Vienna, Austria.

Tisato N., Q. Zhao*, G. Grasselli (2015) Rock deformation and micro-CT analyses. In: 2nd International Conference on Tomography of Materials and Structures – June 29 – July 3 2015 – Quebec City (CA).

Tatone B S A, **Tisato N,** Grasselli G (2015) Characterization of rock discontinuity morphology during shearing using Xray microCT. In: 2nd International Conference on Tomography of Materials and Structures – June 29 – 3rd July 2015 – Quebec City (CA).

Tisato N., Zhao Q.*, Biryukov A., Grasselli G. (2015) Experimental rock deformation under μCT: two new apparatuses, GeoConvention 2015, 4-8 May 2015, Calgary, CSEG Technical Program Expanded Abstracts.

Lupi M, Frehner M, Saenger E H, **Tisato N**, Weis P, Geiger S, Chiodini G, Driesner T (2015) Delayed earthquake volcano interactions at Campi Flegrei Caledra, Italy. In: EGU general meeting, 04/17/15, Vienna, Austria.

Tisato N, Zhao Q*, Biryukov A, Grasselli G (2015) Experimental Rock Deformation under microCT ERDmicro. In: EGU general meeting, 04/17/15, Vienna, Austria.

Tisato N, N, Q Zhao*, Biryukov A, Grasselli G (2015) Experimental Rock Deformation under microCT two new apparatuses. In: GeoConvention, 05/08/15, Calgary, Canada.

Biryukov A, **Tisato N**, Grasselli G (2015) From the lab to real scale simulation of seismic surveillance in viscoelastic media under varying physical conditions. In: GeoConvention, 05/08/15, Calgary, Canada.

Chapman S, **Tisato N**, Quintal B, Holliger K (2015) Laboratory measurements of seismic attenuation of partially saturated Berea sandstone for a range of confining pressures. In: Swiss Geoscience Meeting, 11/21/15, Basel, CH.

Tisato N, Frehner M, Busellato L, Grasselli G (2015) Localized sub-glacial deep karst formation due to water infiltration into glacier crevasses A case study from Asiago, North Italy. In: EGU general meeting, 04/17/15, Vienna, Austria.

Zhao, Q*, **Tisato N**, Lisjak A, Mahabadi O K, Grasselli G (2015) Numerical studies of the spatial and temporal distributions of seismic events under different confining conditions. In: GeoConvention, 05/08/15, Calgary, Canada.

Zhao Q*, **Tisato N**, Grasselli G (2015) Observation of the evolution of fault gauge under microCT. In: EGU general meeting, 04/17/15, Vienna, Austria.

Tisato N, Zhao Q*, Grasselli B (2015) Rock deformation and microCT analyses. In: ICTMS 2015 2nd International Conference on Tomography of Materials and Structures, 07/03/15, Quebec, Canada.

Fabbri S, **Tisato N**, Madonna C, Zappone Alba (2014) Characterization of CO2 reservoir seal rock in Switzerland. In: Euroconference on Rock Physics and Rock Mechanics, 05/11/14, Aussois, France.

Chapman S, **Tisato N**, Quintal B, Holliger K (2014) Laboratory measurements of seismic attenuation in partially saturated rocks. In: EGU General Assembly, 01/27/14, Vienna, Austria.

Tisato N, Madonna C, Quintal B, Grasselli G, Saenger E H (2014) Seismic attenuation at low frequencies in partially saturated rocks: what we have learnt, and new prospective. In: Euroconference on Rock Physics and Rock Mechanics, 05/11/14, Aussois, France.

Tisato N, Biryukov A, Grasselli G (2014) Seismic attenuation in CO2 saturated rocks. In: CMC conference, 05/29/14, Bannf, Canada.

Subramaniyan S, Madonna C, **Tisato N**, Saenger E H, Quintal B (2014) Seismic attenuation: Laboratory measurements in fluid saturated rocks. In: EGU General Assembly, 01/27/14, Vienna, Austria.

Tisato N, Quintal B, Podladchikov Y (2014) Seismic wave attenuation caused by gas dissolution: A new mechanism. In: Euroconference on Rock Physics and Rock Mechanics, 05/11/14, Aussois, France.

Lupi M, Saenger E H, Geiger S, Frehner M, **Tisato N**, Miller S A, Fuchs F, Weis P, Driesner T (2013) From the mud volcano catastrophe in Indonesia to the highest risk volcano in Europe: secret affairs between fluids and earthquakes revealed. In: Hubbert Quorum, 12/08/13, Menlo Park, USA.

Spillmann T, Maurer H, **Tisato N**, Marelli S, Rueedi J (2013) Geophysical monitoring of a gas permeable seal. In: Monitoring in Geological Disposal of Radioactive Waste, Conference and Workshop, 03/19/13, Luxembourg, .

Frehner M, **Tisato N** (2013) Hands-on guide for 3D image creation for geological purposes. In: EGU General Assembly, 07/04/13, Vienna, Austria.

Quintal B, Madonna C, **Tisato N**, Saenger E H (2013) Laboratory apparatuses for measuring seismic attenuation in fluid saturated rocks. In: SBGf Conference, 08/26/13, Rio De Janeiro, Brazil.

Quintal B, **Tisato N** (2013) Modeling seismic attenuation due to wave induced fluid flow in the mesoscopic scale to interpret laboratory measurements. In: SBGf Conference, 08/26/13, Rio De Janeiro, Brazil.

Quintal B, **Tisato N** (2013) Modeling seismic attenuation due to wave-induced fluid flow in the mesoscopic scale to interpret laboratory measurements. In: Biot Conference on Poromechanics, 10/07/13, Vienna, Austria.

Frehner M, Quintal B, Madonna C, **Tisato N**, Saenger E H (2013) Multiscale laboratory and numerical rock physics, A snapshot of ongoing ROCKETH science. In: Tectonomechanics Colloquium, 15/4/13, Paris, France.

Sell K, Madonna C, Quintal B, Frehner M, **Tisato N**, Saenger E H (2013) Synchrotron-based X-ray tomographic images and segmentation techniques to account for effects of grain contacts and micro-cracks on rock properties. In: SBGf Conference, 08/26/13, Rio De Janeiro, Brazil.

Tisato N, Quintal B (2013) Transient fluid pressure and attenuation measurements Strain versus saturation. In: 2nd International Workshop on Rock Physics, 05/08/13, Southampton, UK.

Moulas E, Caddick M J, **Tisato N**, Burg J-P (2012) Another dimension to metamorphic phase equilibria: the power of interactive movies for understanding complex phase diagram sections. In: EGU General Assembly, 22/4/12, Vienna, Austria.

Tisato N, Bontognali T R R, Monteux S, Torriani S F F, Tavagna M L, Walle M, Chailloux D, Renda M (2012) Are the spectacular speleothems of Asperge biogenic?. In: 8th Swiss Geoscience Meeting, 17/11/12, Bern, Switzerland.

Sala P, **Tisato N**, Pfiffner O A, Frehner M (2012) Building a 3D geological near surface model from borehole and laboratory data. In: EGU General Assembly, 22/4/12, Vienna, Austria.

Tisato N, Madonna C, Quintal B, Frehner M, Kuteynikova M, Saenger E H (2012) Combining laboratory and computational experiments to increase rock physics knowledge. In: The Geological Society Conference: Industrial Structural Geology - Principles, Techniques and Integration, 29/11/12, London, UK.

Saenger E H, Frehner M, Madonna C, **Tisato N**, Kuteynikova M, Riahi N, Sala P, Quintal B (2012) Combining laboratory and computational rock physics. In: EGU General Assembly, 22/4/12, Vienna, Austria.

Tisato N, Madonna C, Saenger E H (2012) How stress affects Berea sandstone seismic-wave-attenuation. In: 9th Swiss Geoscience Meeting, 17/11/12, Bern, Switzerland.

Madonna C, **Tisato N**, Saenger E H (2012) Laboratory experiments of seismic wave attenuation from 0.01 Hz up to 100 Hz. In: 6th Swiss Geoscience Meeting, 17/11/12, Bern, Switzerland.

Tisato N, Madonna C, Saenger E H (2012) Measurements and mechanisms investigation of seismic wave attenuation for frequencies between 1 and 100 Hz. In: EGU General Assembly, 22/4/12, Vienna, Austria.

Madonna C, **Tisato N**, delle Piane C, Saenger E H (2012) Measurements of seismic wave attenuation for frequencies between 0.1 and 100 Hz in a Paterson Rig. In: EGU General Assembly, 22/4/12, Vienna, Austria.

Tisato N, Quintal B (2012) Measuring and simulating transient pore pressure as a consequence of seismic waves. In: 10th Swiss Geoscience Meeting, 17/11/12, Bern, Switzerland.

Sala P, Frehner M, **Tisato N**, Pfiffner A (2012) Modeling near surface with shallow borehole information. In: The Geological Society Conference: Industrial Structural Geology - Principles, Techniques and Integration, 29/11/12, London, UK.

Bistacchi A, **Tisato N**, Spagnuolo E, Nielsen S B, Di Toro G (2012) Modelling fault surface roughness and fault rocks thickness evolution with slip calibration based on field and laboratory data. In: AGU Fall Meeting, 03/12/12, San Francisco, USA.

Shih P J, Almqvist B S G, Zappone A, **Tisato N**, Maurer H (2012) Simulating the in situ physical properties of the upper Muschelkalk aquifer, northern Switzerland. In: 7th Swiss Geoscience Meeting, 17/11/12, Bern, Switzerland.

Cordonnier B, **Tisato N**, Boutareaud S (2012) Talc lubrication of faults at seismic velocities: comparison between the rate and state approach and a fluid constrain. In: 5th Swiss Geoscience Meeting, 17/11/12, Bern, Switzerland.

Bruijn R H C, Almqvist B S G, Biedermann A, Erni M I, **Tisato N**, Tripoli B, Zappone A S (2012) The Swiss Atlas of Physical Properties of Rocks (SAPHYR): progress and developments. In: EGU General Assembly, 22/4/12, Vienna, Austria.

Tisato N, Sauro F, Bernasconi S M, Bruijn R, De Waele J (2011) Hypogenic contribution to speleogenesis in a predominant epigenic karst system: a case study from the Venetian Alps. In: 12th Swiss Geoscience Meeting, 12/14/11, Zürich, Switzerland.

Dewhurst D, Delle Piane C, Clennell B, Madonna C, Saenger E H, **Tisato N**, Sarout J, Josh M, Esteban L (2011) Impact of saturation on shale strength and stiffness. In: 9th Euroconference on Rock Physics and Geomechanics, 20/10/11, Throndeim, NO.

Madonna C, **Tisato N**, Artman B, Saenger E H (2011) Low frequency measurements of seismic wave attenuation. In: International Workshop on Rock Physics, 07/08/11, Golden, .

Madonna C, **Tisato N**, Saenger E H (2011) Low frequency measurements of seismic wave attenuation. In: 7th Euroconference on Rock Physics and Geomechanics, 20/10/11, Throndeim, NO.

Madonna C, **Tisato N**, Saenger E H (2012) Low-frequency measurements of seismic wave attenuation. In: 10th Swiss Geoscience Meeting, 12/11/11, Zürich, Switzerland.

Tisato N, Madonna C, Saenger E H (2012) Measurements and mechanisms of seismic wave attenuation in partially saturated rocks. In: 10th Swiss Geoscience Meeting, 12/11/11, Zürich, Switzerland.

Tisato N, Madonna C, Artman B, Saenger E H (2011) Measurements and mechanisms investigation of seismic wave attenuation at low frequencies. In: International Workshop on Rock Physics, 07/09/11, Golden, CO.

Tisato N, Madonna C, Saenger E H (2011) Measurements and mechanisms investigation of seismic wave attenuation at low frequencies. In: 8th Euroconference on Rock Physics and Geomechanics, 20/10/11, Throndeim, NO.

Kuteynikova M, Quintal B, **Tisato N** (2011) Numerical modelling and laboratory measurements of seismic attenuation. In: 9th Swiss Geoscience Meeting, 12/11/11, Zürich, Switzerland.

Sala P, **Tisato N**, Pfiffner O A, Saenger E H (2011) Vp-Vs measurements of shallow formations in Chemery (FR): comparison between laboratory and field data and integration within a 3D geological model. In: 9th Swiss Geoscience Meeting, 12/15/11, Zürich, Switzerland.

Tisato N, Marelli S (2011) Seismic wave velocities of compacted bentonite: An experimental study. In: 9th Euroconference on Rock Physics and Geomechanics, 20/10/11, Throndeim, NO.

Tisato N, Madonna C, Boutareaud S, Burg J-P (2010) A new instrumentation to measure seismic waves attenuation. In: 8th Swiss Geoscience Meeting, 20/11/10, Fribourg, Switzerland.

Tisato N, Madonna C, Boutareaud S, Burg J-P (2010) A new instrumentation to measure seismic waves attenuation. In: AGU Fall meeting, 15/12/10, San Francisco, USA.

Tisato N, Di Toro G, De Rossi N, Quaresimin M (2010) Experimental investigation of flash weakening in limestones. In: 2009 SCEC conference, 12/12/09, Palm springs, USA.

Di Toro G, **Tisato N**, Quaresimin M, De Rossi N (2010) Experimental investigation of flash weakening in limestones. In: AGU Fall meeting, 15/12/10, San Francisco, USA.

Tisato N, Di Toro G, De Rossi N, Quaresimin M (2010) Experimental investigation of flash weakening in limestones. In: Workshop Physico-chemical processes in seismic faults, 09/09/10, Padova, Italy.

Madonna C, **Tisato N**, Boutareaud S, Burg J-P (2010) State of the art of SWAM: Seismic Wave Attenuation Module. In: 8th Swiss Geoscience Meeting, 20/11/10, Fribourg, Switzerland.

Madonna C, **Tisato N**, Boutareaud S, Burg J-P (2010) State of the art of SWAM: Seismic Wave Attenuation Module. In: AGU Fall meeting, 15/12/10, San Francisco, USA.

Tisato N, Di Toro G, De Rossi N, Quaresimin M (2009) Experimental investigation of flash weakening in limestones. In: 8th Euroconference, 09/19/09, Ascona, Switzerland.

Madonna C, **Tisato N**, Boutareaud S, Burlini L, Artman B (2009) New experimental approach to measure seismic wave attenuation of rocks at low frequencies. In: Geoitalia 2009, 09/09/09, Rimini, Italy.

Madonna C, **Tisato N**, Boutareaud S, Burlini L, Artman (2009) New experimental approach to measure seismic wave attenuation of rocks at low frequencies. In: 8th Euroconference, 09/19/09, Ascona, Switzerland.

Madonna C, **Tisato N**, Boutareaud S, Artman B, Burlini L (2009) New experimental approach to measure seismic wave attenuation of rocks at low frequencies. In: 7th Swiss Geoscience Meeting, 11/11/09, Neuchatel, Switzerland.

CURRENT FUNDING

2023-2026: PI (1 month/year), **NSF geophysics**, co-PI Prof. Brett Carpenter (University of Oklahoma) (1 month/year) co-I Prof. Ze'ev Reches (University of Oklahoma) (1 month/year): *Collaborative Research: High-velocity and long-displacement stick-slips: Experimental analogs of earthquake rupture and the seismic cycle ($803,669: $440,327 UT + $363,342 OU).* Efforts: **Tisato**=100% at UT, Carpenter=67% at OU, Reches=33% at OU;

2023-2026: co-I (0.5 months/year), **arpa-e MINER**, PI Estibaliz Ukar (UT Austin, JSG, BEG); co-PI Peter Keleman (Columbia University); co-PI Arthur Stokreef (Canada Nickel Company): Carbon negative reaction-driven cracking for enhanced mineral recovery: In-situ test at a Ni-Co-PGE deposit *($4,997,015: Tisato share~$530,000, including 2 year Post-Doc salary shared with co-I Nicolas Espinoza (UT Austin-PGE)).* Efforts: Chen=2%, Darvari=3%, Espinoza=15%, Fall=6%, Gale=4%, Harrison=6%, Hesse=5%, Kelemen=6%, Leong=5%, Livescu=2%, Mccarthy=3.5%, Nicot=4.5%, Romanak=1%, Savvaidis=2%, Tielke=4%, **Tisato**=10%, Ukar=20%;

2020-2024: collaborator, **SINTEF ICT Norway**, PI Dr. Serhii Lozovyi (SINTEF): *Calibrated rock physics model for quantitative seismic analysis of two-phase fluid saturation ($1,000,000.00: $30,152 to UT).* Efforts: Bakk=5%, Chapman=5%, Dupuy=5% Grimstad=5%, Holt=25%, Lozovyi=35%, Papageorgiou=5%, Stenebråten=10%, **Tisato**=5%;

2020-2024: co-PI (0.5 months/year), **NSF GEOPRISMS**, PI Dr. Harm Van Avendonk co-PI Dr. Nathan Bangs (UT Austin, JSG, IG): *Study of the impact of seamount subduction on the*

outer wedge of the Hikurangi margin from combined lab analyses of rock properties and marine seismic data ($417,473). Efforts: Bangs=20%; **Tisato**=40% Van Avendonk=40%;

2020-2023: PI, **Center for Planetary Systems Habitability at UT Austin**, Seed Grant: *Identifying the microbiome associated with the Breezeway bio-mediated speleothems ($21,650).* Efforts: **Tisato**=100%;

2018-: co-PI, **EDGER forum**, PI Prof. M. Sen, co-PI Prof. K. Spikes (UT Austin, JSG, DSG): *Company-sponsored consortium ($40,000/company/year = ~$400,000).* Efforts: Sen=35%, Spikes=35%, **Tisato**=30%;

2017: **in-kind support** by Seismos INC, TX, *($8,000) .* Efforts: **Tisato**=100%;;

2016-: **in-kind support** by Geomechanica INC (Canada): *Perpetual license of the geo-mechanical software IRAZU* (*http://www.geomechanica.com/software), ($49,140 - includes 7 years maintenance).* Efforts: **Tisato**=100%.

PENDING FUNDING

2023: PI, (1 month/year), **NSF MG&G**, co-PI Dr. Harm Van Avendonk, co-PI Dr. Nathan Bangs (UT Austin, JSG, IG) *Integrated seismic and rock physics investigation of the mechanical strength and deformation of the Hikurangi margin ($689,691).* Efforts: Bangs=20%; **Tisato**=40% Van Avendonk=40%;

2022: co-PI, **NASA PSI**, PI Prof. Mark Hesse co-PIs: Ketcham (UT Austin, JSG, DGS); Vance (NASA-JPL), McCarthy (Columbia University), O'Rouke and Bierson (Arizona State University); Journaux (University of Washington): *Tidal heating, thermal evolution and brine formation in Europa ($1,850,327, Tisato share: $174,000).* Efforts: Bierson=10%, Hesse=30%, Journaux=10%, Ketcham=10%, McCarthy=10%, O'Rouke=10%, **Tisato**=10%, Vance=10%.

PAST FUNDING

2016-2019: co-PI (0.5 months/year), **DOE project**, PI Prof. Peter Flemings*;* co-PIs: Daigle, Di Carlo, Espinoza (UT Austin-PGE); Phillips, Lin, Zachary (UT Austin-DGS): *A multi-scale experimental investigation of flow properties in coarse-grained hydrate reservoirs during production [link] ($1,930,000).* Efforts: Daigle=10%, Di Carlo=10%, Espinoza=10%, Flemings=20%; Lin=10%, Phillips=10%, Thomas=10%, **Tisato**=10%, Zachary=10%.

2018: **Faculty Innovation Grant** for experiential learning, UT Austin *($ 5,400).* Efforts: **Tisato**=100%;

2017: **Visiting Professor at the University of Toronto**: Project. *Rock physics under micro-CT* (*1 month of summer salary $12,000).* Efforts: **Tisato**=100%;

2017: **NVIDIA GPU grant**: I received one high-ended GPU to perform calculations on large datasets *($1000).* Efforts: **Tisato**=100%;

2016: **Research Summer Assignment** by the JSG, project: *Visco-elastic properties of laboratory-scale faults ($20,000).* Efforts: **Tisato**=100%;

2014 – 2015: **Post-Doc fellow grant Swiss National Scientific Foundation and University of Toronto**, project: *Experimental Rock Deformation under micro-CT - ERDμ ($100,000) .* Efforts: **Tisato**=100%;

PATENTS

1) Moos, D., Tisato, N., & Felkl, J. (2020) Fracture length and fracture complexity determination using fluid pressure waves, WO2019089977A1, status: approved.

SCIENTIFIC/TECHNICAL REPORTS

1) Flemings, P. B., Daigle, H., DiCarlo, D., Phillips, S. C., Espinoza, D. N., **Tisato, N.,** Lin, J., Murphy, Z., Thomas, C., (2019) Final Scientific/Technical Report A multi-scale experimental investigation of flow properties in coarse-grained hydrate reservoirs during production (No. DOE-UT-0028967_Final_report, 1579563) (p. DOE-UT-0028967_Final_report, 1579563). DOI: 10.2172/1579563

MENTORED POST-DOCS

2023-: **Dr. Clay Wood**, (co-mentor) UT Austin, research topic: The effect of water and CO2 on ultramafic rocks investigated using various laboratory approaches;

SUPERVISED STUDENTS

2024-: **Vicente Pẽna**, (supervisor) UT Austin, Undergraduate Honors program research topic: Pore pressure and friction during stick-slip experiments using an energy-controlled rotary shear machine;

2023-: **Jacob Allen,** (co-supervisor) UT Austin, M.Sc. research topics: Physical properties of Hikurangi margin rocks to understand seismicity;

2023-: **Saleh Almeshari,** (supervisor) UT Austin, M.Sc. research topic: The effect of water and CO_2 on ultramafic rocks investigated using CT in-situ rock physics experiments;

2023-: **Isabelle Lambert**, (supervisor) UT Austin, Ph.D. research topic: Attenuation of seismic waves in the crust and rocks saturated with bubbly liquids;

2023-2024: **Sarah Al Nasser**, (supervisor) UT Austin, Undergraduate Honors program research topic: Attenuation of seismic waves in gas bubbles;

2018-: **Omar Alamoudi**, (supervisor) UT Austin, Ph.D. research topics: Digital Rock Physics in combination with permeability and damage evolution in tight rocks;

Awards: *2023: 1st place at the JSG Research Student Symposium;*
2023: 1st best poster award at ToScA North America 2023.

2019-2024: **Ethan Conrad**, (co-supervisor) UT Austin, Ph.D. research topic: Dynamic friction in rocks and fault gouge materials;

Awards: *2020: Honorable mention at the JSG Research Student Symposium;*
2020: Outstanding Student Presentation Award (OSPA) at AGU fall meeting;
2021-22: Received a UT Austin Endowed Presidential Scholarship.

Jun-Aug 2023: **Enrique Morales**, Undergraduate Research Traineeship Experience (RTX) (program leader: Dr. Dana Thomas - JSG);

Jun-Aug 2022: **Caylen Thorn**, Undergraduate Research Traineeship Experience (RTX) (program leader: Dr. Dana Thomas - JSG);

2020-2022: **Carolyn Bland**, (supervisor) UT Austin, M.Sc. thesis title: The elastic and transport properties of Hikurangi margin rocks as a function of Stress, saturation, and the presence of fractures.

Now at Pariveda Solutions - Dallas (TX);

2018-2022: **Carole Lakrout**, (supervisor) UT Austin, Undergraduate Student, research topic: morphology and life-mediated genesis of helictites from Breezeway cave (Colorado);

Awards: *2020: 1st place at the JSG Research Student Symposium;*

2021: 1st place at the JSG Research Student Symposium;

2022: 1st place at the JSG Research Student Symposium.

Now at: Geosyntec consulting - NJ;

2020-2022: **Mason Currin**, (supervisor) UT Austin, Undergraduate Student, research topics: designing, testing and use a RaspeberryPi-geophone-based seismometer to acquire seismic data during sport events. *Now employed in the private sector;*

2016-2021: **Eric Goldfarb**, (supervisor) UT Austin, Ph.D. dissertation title: Predictive digital rock physics.

Now at Stifel Canada;

2016-2021: **Ken Ikeda**, (supervisor) UT Austin, Ph.D. dissertation title: Frequency-dependent elastic properties of geomaterials: laboratory experiments and digital rock physics;

Awards: *2019: 1st place at the JSG Research Student Symposium;*

2020-21: Received a UT Austin Endowed Presidential Scholarship.

Now at C3 AI;

2017-2019: **Michael McCann** (co-supervisor) M.Sc. thesis title: Low-Frequency Attenuation Measurements of Fluids.

Now at Expero - Houston (TX);

2015–2017: **Qi Zhao** (co-supervisor) University of Toronto, Ph.D. dissertation title: Investigating brittle rock failure and associated seismicity using laboratory experiments and numerical simulations.

Now Assistant Professor at The Hong Kong Polytechnic University;

2013: **Kathrin Rieger** (co-supervisor) ETH Zürich (IDEA League Group), M.Sc. thesis title: From Brittle to Creep: Investigation of fault weakening tribology under linear loading rate.

Advised students (Ph.D./M.Sc. committee member or academic host)

Sept 2023: **Giovanni Freda**, Academic host, Ph.D. visiting student from University of Modena (Italy), (supervisor: Prof. Silvia Mittempergher);

2023-: **Evan Carnahan**, Ph.D. committee member, UT Austin (supervisors Prof. Ginny Catania and Prof. Marc Hesse);

2023-: **Cristian F Dominguez Godoy,** Ph.D. committee member, UT Austin (supervisor Prof. Carlos Torres-Verdin);

2023-: **Domenico Crisafulli**, Ph.D. committee member, UT Austin (supervisor Prof. Carlos

Torres-Verdin);

2023-: **Mohamad Omar Abdo,** Ph.D. committee member, UT Austin (supervisor Prof. Carlos Torres-Verdin);

2023-: **Alnaseri Osama**, Ph.D. committee member, UT Austin (supervisor Prof. Kyle Spikes);

2020-2021: **Bethany G. Rysak**, M.Sc. committee member, UT Austin (supervisor: Dr. J. Gale);

2020-2021: **Andrew Gase**, Ph.D. committee member, UT Austin (supervisor: Dr. Harm Van Avendonk);

2020: **Rawan Alasad**, Ph.D. committee member, UT Austin (supervisor: Prof. Ron Steel);

2019: **Abdulah Eljalafi**, Ph.D. examining member, UT Austin, DGS (supervisor: Prof. C. Kerans);

2018-2022: **Sebastian Ramiro Ramirez**, Ph.D. committee member, UT Austin, DGS (supervisor: Prof. Peter Flemings);

2018-2022: **Ricardo De Braganza**, Ph.D. committee member, UT Austin, DGS (supervisor: Prof. Mrinal Sen);

2018-2022: **Colin Lucas Schroeder,** Ph.D. committee member, UT Austin (supervisor: Prof. Carlos Torres-Verdin);

2018-2022: **Wei Xie**, Ph.D. committee member, UT Austin (supervisor: Prof. Kyle Spikes);

2018-: **Stephanie Forstner**, Ph.D. committee member, UT Austin (supervisor: Dr. Steve Laubach);

2018: **Hala Alqatari**, M.Sc. committee member, UT Austin, DGS (supervisor: Prof. Mrinal Sen);

2018–2019: **Ziqi Jin**, Academic host, Ph.D. student visiting from China University of Petroleum, Beijing. Research topic: Experimental study of the rheology of bubbly fluids. *Now at Northeast Petroleum University, Daqing 163318, China;*

Nov-Dec 2017: **Sketsiou, Panayiota**, Academic host, Ph.D. visiting student from University of Aberdeen (UK) (supervisor: Prof. Luca De Siena);

2017: **Alison Lawman**, Ph.D. examining member, UT Austin, DGS (supervisor: Prof. T. Quinn);

2017: **Aly Abdelaziz**, Ph.D. committee member, University of Toronto (supervisor: Prof. G. Grasselli);

2017: **Shawn Lee**, M.Sc. committee member, UT Austin, DGS (supervisor: Prof. D. Rempe);

2017-2020: **Suyu Fu**, Ph.D. committee member, UT Austin, DGS (supervisor: Prof. Afu Lin);

2017-2022: **Natchanan (Mint) Doungkaew**, Ph.D. committee member, UT Austin (supervisor: Dr. Peter Eichhubl);

2017-2018: **Matthew Ramos**, Ph.D. committee member, UT Austin (supervisor: Dr. N. Espinoza);

2017-: **Qiqi Wang**, Ph.D. committee member, UT Austin (supervisor: Dr. Steve Laubach).

HONORS AND AWARDS

2017: **Paper of the month in EGU blogs**: *https://blogs.egu.eu/divisions/sm/2017/01/27/paper-of-the-month-bubbles-and-seismic-waves/* (*Tisato, N., Quintal, B., Chapman, S., Podladchikov, Y., & Burg, J. P. (2015). Bubbles attenuate elastic waves at seismic frequencies: First experimental evidence. Geophysical Research Letters, 42, 3880-3887);*

2014: **Top 30 papers presented at the SEG** Annual Meeting, Denver (CO) (among >1500 contributions) "*Seismic Wave Attenuation in Fluid-Saturated Rock as Result of Gas Dissolution*";

2013: **Top 30 papers presented at the SEG** Annual Meeting, Houston (TX) (among >1400 contributions) "*Interpreting attenuation in partially saturated sandstone using measurements of local fluid pressure and numerical modeling of fluid flow in poroelastic media*";

2013: **Best Student Paper, 2nd International Workshop of Rock Physics**, 4-9 August, Southampton (UK).

SERVICE

2024-: **Associate Chair** of the Department of Earth and Planetary Sciences of UT Austin. Leader of the Surface, Subsurface and Life (SSL) program;

2024-: Member of a **search committee** to hire an Assistant Prof. in Geophysics at the Department of Earth and Planetary Sciences of UT Austin (committee chair: Prof. Luc Lavier);

2023-2024: Member of a search committee for a Post-Doc researcher working on earthquakes at UTIG (Committee chair: Prof. Thorsten Becker);

2023: **Organizer, convener or chair of AGU** fall meeting sessions:

MR53B: Rupture and Deformation Processes, from Slow to Fast and from Micro to Macro III Poster;
MR43A: Rupture and Deformation Processes, from Slow to Fast and from Micro to Macro I Oral;
MR44A: Rupture and Deformation Processes, from Slow to Fast and from Micro to Macro II Oral;

2021-: **Associate editor** of Frontiers in Earth Science – Earth and Planetary Materials;

2021-: **Lead editor** of the Research Topic: Rheology of Geomaterials, Bridging Micro and Macro in Frontiers in Earth Science;

2022: Member of a **review panel** for the Department Of Energy (DOE) - Basic Energy Science (BES) program. Program manager: Dr. James Rustad;

2022: Member of a **search committee** at JSG-BEG for a research associate in geothermal resources (chair: Dr. Ken Wisian);

2022-2024: Member of the **Graduate Admissions & Support Committee** (GASC) at the Department of Geological Sciences of UT Austin (committee chair: Prof. Jim Gardner);

2022: **Organizer, convener or chair of AGU** fall meeting sessions:

MR45B: From Rock Physics to Earthquake Mechanics: Insights from the Field, the Lab, and in Between II Poster;
MR52A: From Rock Physics to Earthquake Mechanics: Insights from the Field, the Lab, and in Between III Oral;
MR53A: From Rock Physics to Earthquake Mechanics: Insights from the Field, the Lab, and in Between IV Oral;

2022: Member of the Subsurface, Surface, and Life **(SSL) peer evaluation committee** (chair: Prof. Peter Flemings);

2021: Member of a **search committee** at JSG-BEG for a research associate in geothermal resources (chair: Dr. Ken Wisian);

2021-: Member of the **Award Committee** at the Department of Geological Sciences of UT Austin (committee chair: Prof. Rowan Martindale);

2021: **Organizer, convener or chair of AGU** fall meeting sessions:

MR35A: Fault-Slip Acceleration: From Slow to Fast, From the Lab to the Field, and In Between III Poster;

MR34A: Fault-Slip Acceleration: From Slow to Fast, From the Lab to the Field, and In Between II Oral;

MR33A: Fault-Slip Acceleration: From Slow to Fast, From the Lab to the Field, and In Between I Oral;

2019: **Organizer, convener or chair of AGU** fall meeting sessions:

MR34A: Damage and Anelastic Deformation Across Scales I;

MR34A: Damage and Anelastic Deformation Across Scales II Poster;

MR21C: Digital Rock Physics: State-of-the-Art Numerical Modeling of Laboratory Experiments I Posters;

2018–2019: **Theme leader for geophysics at AAPG** Annual Convention and Exposition 2019, 19-22 May 2019, San Antonio (program chair: Dr. Lorena Moscardelli – Equinor);

2019-2024: Member of the **Undergraduate Studies Committee** at the Department of Geological Sciences of UT Austin (committee chairs: Prof. Daniella Rempe, Prof. Tim Shanahan, and Prof. Jaime Barnes);

2018–2019: **Member of the committee** for the geophysics curriculum reform at the Department of Geological Sciences of UT Austin (Austin (committee chair: Prof. Kyle Spikes);

2017–2018: Member of a **search committee** to hire an Assistant Prof. in Sedimentology at the Department of Geological Sciences of UT Austin (committee chair: Prof. David Mohrig);

2017-: **Judge** (~once per year) at the Jackson School of Geosciences - Student Research Symposium;

2017-: **Instructor and leader of field trips** (~twice per year) for new graduate (inGOT field trip) and undergraduate students (NeoGeo field trip and RTX field trip) of the Department of Earth and Planetary Science and Department of Geological Science (until 2023) at UT Austin;

2015-: **Reviewer of scientific proposals** submitted to the National Scientific Foundation (NSF) and European Research Council (ERC);

2012-: **Journal reviewer** (e.g., Geophysics, Journal of Geophysical Research, Research Geophysical Letters, Nature Geosciences);

OUTREACH

2019: June, 24th (1-5 pm) - **onRamps** Professional Learning Institute. Activity with high school teachers to learn the use of the Arduino platform for monitoring. Activity title “Volcanoes! Monitoring and Measurements” (in collaboration with Dr. Dana Thomas and Mr. John Maisano);

2022: June-July - **RTX** program supervisor;

2023: June-July - **RTX** program supervisor;

2023: **Reilly Elementary School** (ISD Austin) – one-hour presentation to third and fourth graders about earthquakes;

2024: July - **GeoForce** academy instructor;

RELEVANT FIELD EXPERIENCES

2022: I co-organized and participated with Dr. Harm Van Avendonk in an **eight days long field trip to the North Island of New Zealand** to collect ~300 kg of rock samples (project: NSF-OCE 1949171);

2012: I organized and participated in a **geological field trip to Cuba** to study the peculiar concretions of Santa Catalina Caves – Matanzas (supported by Petrobras);

2012: I actively participated in the **field trip organized by the BioGeoScience group of ETH Zürich** (Prof. Tim Eglinton) to collect fluvial sediments of the Kaveri River (India).