Curriculum Vitae

Name: Elena Florinela Manea

Home address: Piatra village, Teleorman county, Romania

Mailing address: 1 Fairway Drive, Avalon 5011, PO Box 30-368, Lower Hutt 5040, New Zealand

Email:e.manea@gns.cri.nz

Work experience:

2021 - present: Senior Researcher - Seismic Hazard Ground Motion Modelling, GNS Science

- applying machine learning (ML) in seismology; near-real time rapid response for hazard purposes and development of ML engineering databases
- testing and developing empirical ground motion models in New Zealand; evaluation of the epistemic and aleatory uncertainties using ergodic and non-ergodic approaches
- geophysical investigation of near-surface structure, seismic site response analysis; impact of local site parameters on the seismic ground motion parameters; building and calibrating 3D geophysical models
- evaluation of seismic hazard in New Zealand using PSHA

2018 - 2023 Senior Researcher at the National Institute of Earth Physics, Romania (RO)

- developing empirical ground motion models for crustal and intermediate-depth seismic activity in Romania and its neighboring countries; evaluation of the epistemic and aleatory uncertainties using ergodic and non-ergodic approaches
- geophysical investigation of near-surface structure, seismic site response analysis; building and calibrating 3D geophysical models; evaluation of local ground motion variability and non-linear effects - 3D numerical modeling using the AWP 3D finite difference algorithm
- evaluation of local and regional seismic hazard in Romania using deterministic and probabilistic approaches
- operational monitoring at the Romanian National Seismic Network: detection and localization of earthquakes across the world using ANTELOPE system

February – July 2018 Fulbright Postdoctoral Scholar, Dept. Geological Sciences, San Diego State University, San Diego, California. Project title: Complex 3D Non-linear Wave Propagations at two Sites Exhibiting Similar Amplification Effects: Moesian Platform (Romania) and the Los Angeles Region (California). Supervisors: Prof. Dr. Kim Bak Olsen and Dr. Daniel Roten.

2015 – 2018 Young Researcher at NIEP, Magurele, Romania (RO)

2014 – 2015 Young researcher in the framework of the 13.123 Sciex Project (www.sciex.ch) in the Department of Earthquake Hazard and Risk Assessment, Swiss Seismological Service (SED), ETH, Zürich, Switzerland (CH, http://www.seismo.ethz.ch/en/home/)

2012 – 2014 Young researcher at NIEP, Magurele, RO

2011 – 2012 Young researcher at National Meteorological Administration, Bucharest, RO

Education:

2013 – 2016 PhD studies at the Doctoral School of Physics, University of Bucharest, Bucharest, RO, National Grant from Ministry of National Education and Scientific Research. Final mark: Summa cum laude (Excellent). Thesis: Seismic risk analysis for the extra-Carpathian area of Romania. Supervisors: Prof. Dr. Mircea Radulian (NIEP) and Prof. Dr. Donat Fäh (SED, ETH Zürich).

2013 – 2014 Specialization certificate for the assessment and management of geological and climate related risk (CERG-C). University of Geneva, Geneva, CH. Grant from "Hans Wilsdorf" Foundation. Thesis: Seismic risk assessment for Bucharest area. Supervisor: Dr. Blaise Duvernay.

2010 – 2012 Master's Studies, Faculty of Physics, University of Bucharest, RO. Thesis: Site effects evaluation for Bucharest area using seismic records, borehole data and the propagation of SH waves through nonlinear media. Supervisor: Prof. Hon. Dr. Gheorghe Marmureanu.

2007 – 2010 Bachelor's Studies, Computational Physics, University of Bucharest, RO.

2003 – 2007 High school, Mathematics and Computer Science, National College "Al. D. Ghica", Alexandria, RO

Training and internships:

- Training in "Developing databases and portals in GIS", September, 2016, Bucharest, Romania
- Training on the Global Earthquake Model (GEM) tools for PSHA model development and its calculation (OPENQUAKE) in March 2016 at GEM Regional Office, Pavia, Italy.
- Young Seismologists and Engineers Training Course on Ambient Noise Measurements, 2014, Istanbul (organized by European Seismological Commission), Turkey.
- Internship at Department of Mathematics and Geosciences (DMG), University of Trieste, 2014, research title: "Extended source simulation for March 4, 1977 earthquake (Mw=7.4)". Supervisor: Prof. Hon. Dr. Giuliano F. Panza. Supported by the Bilateral Agreement between the Education Ministries of Romania and Italy.
- International School and Workshop on Nonlinear Mathematical Physics and Natural Hazards, November 2013, BAS-Sofia, organized within the framework of South East Europe Network in Mathematical and Theoretical Physics (SEENET MTP)

Fellowships, scholarships and research grants, or other prizes and awards:

- Mobility grant, PN-III-P1-1.1-MC-2019-0288, supported by Executive Unit for Financing Higher Education, Research, Development and Innovation (UEFISCDI), Romania, project title: Broadband platform implementation for Bucharest city, August - October 2019, San Diego State University, San Diego, CA, USA.
- Romanian Academy Award in Physics, Constantin Miculescu, 2018 selection for the year 2016, for the paper 3 (see list of refereed journal publications)
- Fulbright Postdoctoral Student Award, 2017, project title: Complex 3D Non-linear Wave Propagations at two Sites Exhibiting Similar Amplification Effects: Moesian Platform (Romania) and Los Angeles Region (California). Supervisors: Prof. Dr. Kim Bak Olsen and Dr. Daniel Roten.
- Best Poster Award at Probabilistic Seismic Hazard Assessment (PSHA) Workshop, September 2017, Lenzburg, CH, Title: Exploratory analysis of new GMPE's using small/moderate crustal events in Romania.
- Four papers were awarded by the Executive Agency for Higher Education, Research, Development and Innovation,Romania, in 2015, 2016, 2017 and 2019(see papers 1, 2, 3 & 6 from list of refereed journal publications);
- Best paper published in 2016 by a young researcher from National Institute for Earth Physics, see paper 2 from list of refereed journal publications

- Sciex Project No. 13.123 (www.sciex.ch), 2014, title: “3D-ASEMB / The analysis of site effects using 3D models for the area of Bucharest city”, under the supervision of Prof. Dr. Donat Fäh at SED, ETH Zürich, CH
- Internship founded by the Bilateral Agreement between the Education Ministries of Romania and Italy, 2014, in the Department of Mathematics and Geosciences (DMG), University of Trieste, 2014, research title: “Extended source simulation for March 4, 1977 earthquake (Mw=7.4)”. Supervisor: Prof. Hon. Dr. Giuliano F. Panza.
- Internship from Earthquake Engineering and Seismology Society, for "Young Seismologists and Engineers Training Course on Ambient Noise Measurements", 2014, Turkey
- Grant from "Hans Wilsdorf" Foundation, supported my studies on the assessment and management of geological and climate related risk (CERG-C), 2012.
- National Grant from Ministry of National Education and Scientific Research for my PhD studies, 2012.

Professional experience in scientific projects:

- International project: New Zealand National Seismic Hazard Model (2021-2024; https://nshm.gns.cri.nz/); Rapid Characterisation of Earthquakes and Tsunami (2021-2025; https://www.gns.cri.nz/research-projects/rcet/); GeoNet Renewal Project (2021 - ongoing) https://www.gns.cri.nz/research-projects/geonet/; SERA project (2017-2019, www.sera-eu.org/);
- National projects: PN 19 08 01 02 MULTIRISC (2019 – 2020); PN 18 15 01 01 (2017 - 2018); RO-RISK Project (2016 – 2017, https://gis.ro-risk.ro/site/index-EN.html); SEER Project (2016 - 2017, http://seer.infp.ro/); BIGSEES project (2012 - 2016, http://infp.infp.ro/bigsees/default.htm); PN 16 35 02 02 - CREATOR (2015 - 2016)

Computer Proficiencies:

Python, Matlab, Bash, R, ObsPy, Anelastic Wave Propagation code, Antelope, Global Earthquake Model (GEM) tools, ArcGIS, Shake 2000, Latex, etc.

Professional & Community Activities:

Expert ellicitation for seismic hazard; Fulbright evaluator

Research volunteer at San Diego State University, San Diego, California, USATeaching a part of the course and seminar: “Introduction to Seismology”, at the Faculty of Physics, University of Bucharest, spring semester, starting with 2019

Reviewer at BSSA, SRL, Eq. Spectra, NHESS, SRL, Geosciences Journal, BNZSEE

Mentoring: 4 Bachelor, 2 Master, and 1 PhD student in Romania; 2 Master and 3 PhD in NZ

Member of AGU, SSA, EGU, IASPEI, IAG, GEM, SCEC, WMIS

Member of the organizing committee for “The 5th National Conference on Earthquake Engineering and the 1st National Conference on Earthquake Engineering and Seismology”, 2014; Earthquake Engineering and Seismology International Conference - ECEES 2022

Languages:

Romanian - Mother Tongue, English - Fluent, French and German – Basic

Publications and presentations:

I am an author and co-author of 45 research papers and 80+ presentations during scientific meetings.

Refereed Journal Publications:

1. **Manea, E. F.**, Bora, S. S., Hutchinson, J. A., & Kaiser, A. E. (2024). Uniformly processed Fourier spectra amplitude database for recently compiled New Zealand strong ground motions. Seismological Research Letters, 95(1), 239-252.
2. Stirling, M., **Manea, E.**, Gerstenberger, M., & Bora, S. (2024). Testing and evaluation of the New Zealand national seismic hazard model 2022. Bulletin of the Seismological Society of America, 114(1), 474-485.
3. **Manea, E. F.**, Kaiser, A., Hill, M., Wotherspoon, L., Bourguignon, S., Bora, S., & Stolte, A. (2024). A high‐resolution site amplification map for Wellington, New Zealand. Seismological Research Letters, 95(1), 159-171.
4. Wotherspoon, L. M., Kaiser, A. E., Stolte, A. C., & **Manea, E. F.** (2024). Development of the site characterization database for the 2022 New Zealand National Seismic Hazard Model. Seismological Research Letters, 95(1), 214-225.
5. Lee, R. L., Bradley, B. A., **Manea, E. F.**, Hutchinson, J. A., & Bora, S. S. (2024). Evaluation of empirical ground‐motion models for the 2022 New Zealand National Seismic Hazard Model revision. Bulletin of the Seismological Society of America, 114(1), 311-328.
6. Bora, S. S., Bradley, B. A., **Manea, E. F.**, Gerstenberger, M. C., Lee, R. L., Stafford, P. J., ... & Van Dissen, R. J. (2024). Hazard sensitivities associated with ground‐motion characterization modeling for the new zealand national seismic hazard model revision 2022. Bulletin of the Seismological Society of America, 114(1), 422-448.
7. Bradley, B. A., Bora, S. S., Lee, R. L., **Manea, E. F.**, Gerstenberger, M. C., Stafford, P. J., ... & Kaiser, A. E. (2024). The ground‐motion characterization model for the 2022 New Zealand National Seismic Hazard Model. Bulletin of the Seismological Society of America, 114(1), 329-349.
8. Gerstenberger, M. C., Bora, S., Bradley, B. A., DiCaprio, C., Kaiser, A., **Manea, E. F.**, ... & Wotherspoon, L. M. (2024). The 2022 Aotearoa New Zealand National Seismic Hazard Model: Process, Overview, and Results. Bulletin of the Seismological Society of America, 114(1), 7-36.
9. Kaiser, A. E., Hill, M. P., de la Torre, C., Bora, S., Manea, E., Wotherspoon, L., ... & Gerstenberger, M. (2024). Overview of site effects and the application of the 2022 New Zealand NSHM in the Wellington Basin, New Zealand. Bulletin of the Seismological Society of America, 114(1), 399-421.
10. Hutchinson, J. A., Zhu, C., Bradley, B. A., Lee, R. L., Wotherspoon, L. M., Dupuis, M., **Manea, E. F.**, Kaiser, A. E. (2024). The 2023 New Zealand Ground‐Motion Database. Bulletin of the Seismological Society of America, 114(1), 291-310.
11. **Manea, E. F.**, Danciu, L., Cioflan, C. O., Toma-Danila, D., & Gerstenberger, M. (2024). Testing the 2020 European Seismic Hazard Model (ESHM20) against observations from Romania. Natural Hazards and Earth System Sciences Discussions, 1-18.
12. Craiu, A., Craiu, M., Mihai, M., **Manea, E. F.**, & Marmureanu, A. (2023). Vrancea intermediate-depth focal mechanism catalog: a useful instrument for local and regional stress field estimation. Acta Geophysica, 71(1), 29-52.
13. **Manea, E. F.**, Cioflan, C. O., & Danciu, L. (2022). Ground-motion models for Vrancea intermediate-depth earthquakes. Earthquake Spectra, 38(1), 407-431.
14. Craiu, A., Ferrand, T. P., **Manea, E. F**., Vrijmoed, J. C., & Mărmureanu, A. (2022). A switch from horizontal compression to vertical extension in the Vrancea slab explained by the volume reduction of serpentine dehydration. Scientific reports, 12(1), 22320.
15. **Manea, E. F.,** Coman, A., Cioflan, C. (2021). Evaluation of the predominant frequency of resonance of sedimentary layers using 2014 5.7 ML Vrancea crustal event records. Romanian Reports in Physics 73(2021): 709.

16. Ferrand, T. P., & **Manea, E. F.** (2021). Dehydration-induced earthquakes identified in a subducted oceanic slab beneath Vrancea, Romania. Scientific reports, 11(1), 1-9.
17. Coman, A., **Manea, E. F.**, & Radulian, M.(2021) Effects of soft soils on seismic ground motion in the centre and western Romania. Accepted at **Romanian Journal of Physics**.
18. **Manea, E. F.**, Cioflan, C. O., Coman, A., Michel, C., Poggi, V., & Fäh, D. (2020). Estimating Geophysical Bedrock Depth Using Single Station Analysis and Geophysical Data in the Extra-Carpathian Area of Romania. Pure and Applied Geophysics, 1-16.
19. Coman, A., **Manea, E. F. (corresponding author)**, Cioflan, C., O. (2020). Interpreting the fundamental frequency of resonance for Transylvanian Basin. Romanian Journal of Physics 65, 809
20. **Manea, E.F.**, Predoiu, A., Cioflan, C. and Diaconescu, M. (2019), Interpretation of resonance fundamental frequency for Moldavian and Scythian Platforms. Romanian Reports in Physics 71 (2019): 709.
21. **Manea, E.F.**, Michel, C., Hobiger, M., Fäh, D., Cioflan, C.O. and Radulian, M. (2017), Analysis of the seismic wavefield in the Moesian Platform (Bucharest area) for hazard assessment purposes. Geophysical Journal International, 210(3), pp.1609-1622.
22. **Manea, E.F.**, Michel, C., Poggi, V., Fäh, D., Radulian, M. and Balan, F.S. (2016), Improving the shear wave velocity structure beneath Bucharest (Romania) using ambient vibrations. Geophysical Journal International, 207(2), pp.848-861.
23. Mărmureanu, G., **Manea, E. F. (corresponding author)**, Cioflan, C.,O., Marmureanu, A., & Toma-Danilă, D. (2017), Spectral response features used in last IAEA Stress Test to NPP Cernavoda (Romania) by considering strong nonlinear behaviour of site soils. Romanian Journal of Physics, 62(9-10).
24. Mărmureanu, G., Mărmureanu, A., **Manea, E.F.**, Toma-Danila, D., & Vlad, M. (2016), Can we still use classic seismic hazard analysis for strong and deep Vrancea earthquakes? Romanian Journal of Physics, Vol. 61, Issue: 3-4, Pages: 728-738.
25. Toma-Danila D., Zulfikar C., **Manea E.F.**, Cioflan C.O. (2015), Improved seismic risk estimation for Bucharest, based on multiple hazard scenarios and analytical methods; Soil Dynamics and Earthquake Engineering, Vol. 73, 1-16.
26. Bostan, D. C., **Manea, E. F.**, & Stefan, S. (2015). Total and partial cloudiness distribution in eastern Romania. Romanian Reports in Physics, 67(3), 1117-1127.

In-review papers:

1. **Manea, E. F.**, Kaiser, A., Stolte, A., Hill, A.,Wotherspoon, L. (2023) Evaluation of local site parameters from microtremor data to inform seismic site characterization in New Zealand. Bulletin of Seismological Society of America
2. Coman, A., **Manea, E.** , Cioflan, C.O., Gyori E., (2023). Local site investigation across the Carpathian - Pannonian region. Proceedings of WCEE
3. Stolte, A., Wotherspoon, L., Jeong, A., **Manea E.** (2023) The effects of multiple impedance contrasts on mHVSR and observed ground shaking in New Zealand. Proceedings of WCEE

In preparation:

1. **Manea, E. F.**, Cioflan, C., O., Danciu, L. Exploratory analysis of new GMPE's for crustal activity in Romania. Bulletin of Earthquake Engineering
2. Coman, A., **Manea, E. F.**, Győri, E., Cioflan, C., O., Poggi, V. Site Effects Investigations along the Pannonian Basin. Engineering Geology

3. **Manea, E. F.**, Roten, D., Krézsek, C., Olsen, K., B. Calibration of the first 3D geophysical model for Moesian Platform. Geophysical Research Letter

Non-Refereed Publications:

1. Constantin, A.P., I.A. Moldovan, R. Partheniu, E. F. Manea, C. Ionescu (2019) Testing and developing the macroseismic intensity attenuation relationships for the Vrancea (Romania) crustal earthquakes, Proc. of the 5th World Multidisciplinary Earth Sciences Symposium -WMESS 2019, IOP Conf. Ser.: Earth Environ. Sci. 362 012058
2. Moldovan, I.A., Constantin, A. P., Ardeleanu, L., Ionescu, C., Grecu, B., Manea, L., M., Toma Danila, D., Toader, V.-E., Partheniu, R., **Manea, E. F.**, Tiganescu, A., Placinta, A. O. (2019) Macroseismic intensity estimation from instrumental ground motion recordings in the case of small and moderate Vrancea subcrustal earthquakes. Accepted at Proceedings of the 5th World multidisciplinary Earth sciences symposium
3. Moldovan, I.A., Constantin, A. P., Ardeleanu, L. **Manea, E. F.**, Partheniu, R., Constantinescu, E. G. (2019) Macroseismic intensity attenuation laws for large Vrancea (Romania) intermediate earthquakes. Accepted at Proceedings of 19th International Scientific GeoConference SGEM
4. Constantin, A. P., Moldovan, I. A., Partheniu, R., **Manea, E. F.**, Ionescu, C. (2019) Testing and developing the macroseismic intensity attenuation relationships for the Vrancea (Romania) crustal earthquakes. Accepted at Proceedings of the 5th World multidisciplinary Earth sciences symposium.
5. Mărmureanu, G., Mărmureanu, A., Cioflan, C.O., Ionescu, C., **Manea, E. F.** (2018) Evidences to sustain nonlinear seismology approach in areas subjected to strong Vrancea earthquakes. Proceedings of the 16th European Conference on Earthquake Engineering, 2018.
6. Mărmureanu, Gh., Cioflan, C.O., Mărmureanu, A. and **Manea, E. F.** (2014) Nonlinear seismology – a reality. Bridging the gap between this reality and earthquake engineering, Proceedings of The 5th National Conference of Earthquake Engineering and The 1st National Conference on Earthquake Engineering and Seismology (Bucharest, Romania), pp. 411-418.
7. Mărmureanu, Gh., Cioflan, C.O., Mărmureanu, A. and **Manea, E. F.** (2014) Nonlinear seismology – a reality. Bringing the gap between this reality and earthquake engineering, Proceedings of The 5th National Conference of Earthquake Engineering and The 1st National Conference on Earthquake Engineering and Seismology, Conspress, Bucharest, 2014, p. 205-212.
8. Moldovan, I. A., Grecu, B., Constantin, A. P., Anghel, A., **Manea, E.F.**, Manea, L., Toader, V.E., Partheniu, R. (2018), Seismic Intensity Estimation Using Macroseismic Questionnaires and Instrumental Data—Case Study Barlad, Vaslui County. In Seismic Hazard and Risk Assessment (pp. 71-85). Springer, Cham.
9. Rogozea, M.M., Moldovan, I.A., Constantin, A.P., **Manea, E.F.**, Manea, L.M. and Neagoe, C. (2018). Testing the Macroseismic Intensity Attenuation Laws for Vrancea Intermediate Depth Earthquakes. In Seismic Hazard and Risk Assessment (pp. 87-101). Springer, Cham.
10. Toma-Danila D., Cioflan C.O., Balan S.F., **Manea E.F.** (2015). Characteristics and results of the near real-time system for estimating the seismic damage in Romania, Mathematical Modelling in Civil Engineering, Vol. 11, No. 1, 33-41
11. Toma-Danila, D., Cioflan, C., **Manea, E. F.** Estimating the impact of strong earthquakes on the Romanian road network system. Proceedings of the 16th European Conference on Earthquake Engineering (16ECEE), 2018
12. Toma-Danila, D., Cioflan, C.O., Armas, I., **Manea, E. F.** (2017). The contribution of GIS to seismology. Case study: the assessment of seismic hazard and risk in Romania. Proceedings of the 6th National Conference on Earthquake Engineering & 2nd National Conference on Earthquake Engineering and Seismology. Conspress, Bucharest, p. 429-436.

13. Toma-Danila, D., Cioflan, C.O., Balan, S.F., **Manea, E. F.** (2015). Characteristics and results of the near real-time system for estimating the seismic damage in Romania, Mathematical Modelling in Civil Engineering, Vol. 11, No. 1, p. 33-41
14. **Manea, E. F.**, Toma-Danila, D., Cioflan, C.O., Marmureanu, G., Radulian, M, Balan, S.F. (2014) Seismic risk analysis for extra-Carpathian area of Romania, considering Vrancea intermediate-depth source; Proceedings of the Second European Conference on Earthquake Engineering and Seismology.
15. Toma-Danila, D., Zulfikar, C., **Manea, E. F.** (2014) Adapting seismic loss estimation software to local conditions – Vrancea intermediate - depth earthquakes case study. Proceedings of Second European Conference on Earthquake Engineering and Seismology.

Books and chapters:

1. **Manea E.F.** (2017) PhD thesis book: 3D geophysical model and complex wavefield interpretation for Bucharest metropolitan area. Tehnopress Publishing, ISBN 978-606-68-308-6, 105p.
2. **Manea, E.F.**, Toma-Danila, D., Cioflan, C.O., Mărmureanu, G. (2015). Steps in Seismic Risk Mapping for Romania Capital City. Nonlinear Mathematical Physics and Natural Hazards. Springer Proceedings in Physics - Verlag Berlin Heidelberg; Chapter 8; p.105-131. ISBN 978-3-319-15327-9
3. Cioflan C.O., Toma-Danila D., **Manea E.F.** (2016). Seismic loss estimates for scenarios of the 1940 Vrancea earthquake (chapter), pp 425-439. In: The 1940 Vrancea Earthquake. Issues, Insights and Lessons Learnt. Proceedings of the Symposium Commemorating 75 Years from November 10, 1940 Vrancea Earthquake. Eds: Vacareanu R. and Ionescu C., Springer Natural Hazards Series, Springer International Publishing, DOI 10.1007/978-3-319-29844-3
4. Mărmureanu, Gh., Cioflan, C.O., Mărmureanu, A. and **Manea, E. F.** (2016). Main characteristics of November 10, 1940 strong Vrancea earthquake in seismological and physics of earthquake terms. In: The 1940 Vrancea Earthquake. Issues, Insights and Lessons Learnt. Proceedings of the Symposium Commemorating 75 Years from November 10, 1940 Vrancea Earthquake. Eds: Vacareanu R. and Ionescu C., Springer Natural Hazards Series, Springer International Publishing, DOI 10.1007/978-3-319-29844-3
5. Mărmureanu, Gh., Cioflan, C.O., Mărmureanu, Al., Ionescu, C., **Manea, E.F.** (2015). Bridging the gap between nonlinear seismology as reality and earthquake engineering. Perspectives on European Earthquake Engineering and Seismology, Chapter 17, Vol. 2. pg. 409-428; Springer Verlag, series: Geotechnical, Geological & Earthquake Engineering Vol.2.; ISBN 978-3-319-16963-7; 2015.

Invited presentations:

1. **Manea, E. F. (2018)** Insights from local seismic hazard assessment, case study: Bucharest city (Romania). Scripps Institution of Oceanography, UC San Diego

Papers presented at conferences:

1. **Elena Manea** & NSHM team. Regionally Adaptable Ground-Motion Models for Subduction Seismicity in New Zealand. SSA 2023
2. Matt Gerstenberger, **Elena Manea** & NSHM team. The 2022 New Zealand National Seismic Hazard Model: Overview and Seismicity Rate Model. SSA 2023

3. Sanjay Bora, **Elena Manea** & NSHM team. Ground-Motion Characterization modeling for New Zealand National Seismic Hazard Model (NSHM-22) Revision and Associated Hazard Sensitivities. SSA 2023
4. Anna Kaiser, **Elena Manea** & NSHM team. Quantifying site amplification for seismic hazard in a complex shallow basin: case study of the Wellington Basin, New Zealand. SSA 2023
5. **Elena Manea**, Anna Kaiser, Liam Wotherspoon, Andrew Stolte, Matthew Hill. Evaluation of site parameters to inform seismic site characterisation in New Zealand. 2022 Australian Earthquake Engineering Society (November)
6. **Elena Manea**, Anna Kaiser, Liam Wotherspoon, Andrew Stolte, Matthew Hill. Local site amplification extracted from systematic analysis of ambient vibration and earthquakes records in New Zealand. AGU 2022
7. **Elena Manea**, Sanjay Bora, Anna Kaiser, Jesse Hutchinson, Matt Gerstenberger. Region-specific Ground Motion Models for Subduction seismicity in New Zealand. AGU 2022
8. M Gerstenberger, **Elena Manea** & NSHM team. The 2022 Aotearoa New Zealand National Seismic Hazard Model - GSNZ 2022
9. S. Bora, B. Bradley, **E. Manea**, M. Gerstenberger, NSHM team. The 2022 revision of National Seismic Hazard Model for New Zealand: candidate Ground-Motion Models (GMMs) and associated hazard sensitivities- GSNZ 2022
10. **Elena Manea**, Anna Kaiser, Liam Wotherspoon, Andrew Stolte, Matthew Hill. Evaluation of site parameters to inform seismic site characterization in New Zealand - GSNZ 2022
11. S. Bora, B. Bradley, **E. Manea**, M. Gerstenberger, Chris DiCaprio1, Robin Lee, P. Stafford, G. Atkinson, G. Weatherhill, A. Kaiser, R. van Dissen. GMCM sensitivity analysis for the 2022 New Zealand National Seismic Hazard – GSNZ 2022
12. M Gerstenberger,**Elena Manea** & NSHM team. The 2022 Aotearoa New Zealand National Seismic Hazard Model. Taiwan-Japan-NZ Seismic Hazard Assessment Meeting 2022
13. S. Bora, B. Bradley, **E. Manea**, M. Gerstenberger, NSHM team. Candidate Ground-Motion Models and Associated Hazard Sensitivities for New Zealand National Seismic Hazard Model. Taiwan-Japan-NZ Seismic Hazard Assessment Meeting 2022
14. A.C. Stolte, C. Brown, K.L. Lee, L.M. Wotherspoon, **E.F. Manea** (2023). Estimates of site periods from mHVSR analysis of IRIS temporary seismograph networks. 2023 NZSEE Annual Technical Conference
15. M.P. Hill, A.E. Kaiser, L.M. Wotherspoon, **E.F. Manea** (2023). Using 3D geological models to create maps of estimated Vs30 and site period. 2023 NZSEE Annual Technical Conference
16. **Elena Florinela Manea**, Carmen Ortanza Cioflan, Laurentiu Danciu, Alexandru Marmureanu and Alina Coman. Region - specific Ground Motion Models for Vrancea Intermediate - Depth Earthquakes. Abstract and extended paper accepted at 3ECEES 2022 - September
17. Alina Coman, Carmen Ortanza Cioflan, **Elena Florinela Manea** and Nicu Marius Mihai. The evaluation of the path effects impact on ground motion from spectral ratios analysis. Abstract and extended paper accepted at 3ECEES 2022 - September
18. Nikos Theodoulidis, Basil Margaris, Dimitris Sotiriadis, Can Zulfikar, Seyhan Okuyan, Carmen Cioflan, **Elena-Florinela Manea** and Dragos Toma-Danilla. Rapid Earthquake Damage Assessment System in the Black Sea Basin: Selection/Adoption of GMPEs with Emphasis in the Cross-Border Areas. Abstract and extended paper accepted at 3ECEES 2022 - September
19. Alina Coman, **Elena Manea**, Carmen Ortanza Cioflan. The analogy between spectral ratios computed on ambient vibration and earthquake records. 2022 IBWAP(July)

20. **Elena Manea** & NSHM team. Ground Motion Models for Subduction seismicity in New Zealand. The 11th ACES (APEC Cooperation for Earthquake Science) International Workshop Blenheim, New Zealand, 28 Feb – 3 Martie, 2023
21. Matt Gerstenberger & NSHM team. The 2022 New Zealand National Seismic Hazard Model: Overview and Seismicity Rate Model. The 11th ACES International Workshop Blenheim, New Zealand, 28 Feb – 3 Martie, 2023
22. Sanjay Bora & NSHM team. Capturing epistemic uncertainty in ground-motion prediction: the New Zealand national seismic hazard model (NSHM) - 2022 and the challenges ahead. The 11th ACES International Workshop Blenheim, New Zealand, 28 Feb – 3 Martie, 2023
23. **Manea, E. F.,** Danciu, L., Cioflan, C.O., Coman, A., Marmureanu, A. Ground Motion Models for Vrancea Intermediate-Depth Earthquakes. SSA 2021
24. Craiu A., Craiu M., Mihai M., **Manea, E. F.,** Marmureanu A. Tectonic stress patterns along the Vrancea subcrustal zone from the inversion of focal mechanisms data. EGU 2021
25. **Manea, E. F.,** Danciu, L., Cioflan, C.O., Coman, A., Marmureanu, A. Regional-specific ground motion models for Vrancea intermediate-depth source. The 5th Geoscience Symposium, Bucharest, Romania, 2020.
26. Coman, A., **Manea, E. F.**, Cioflan, C.O., Radulian, M. Impact of back-arc attenuation on seismic wavefield. The 5th Geoscience Symposium, Bucharest, Romania, 2020.
27. Coman, A., **Manea, E. F.,** Cioflan, C.O. Geophysical bedrock depth computation for the extra -Carpathian area of Romania. The 5th Geoscience Symposium, Bucharest, Romania, 2020.
28. Coman, A., **Manea, E. F.**, Predoiu, A., Cioflan, C.O. Evaluation of the predominant frequency of resonance for 2014 5.4 Mw Vrancea crustal event. The 5th Geoscience Symposium, Bucharest, Romania, 2020.
29. Cioflan, C.O., **Manea, E. F.**, Danciu, L., Coman, A., Marmureanu, A. Evaluation of up-to-date ground motion models for inslab activity in Romania.The 5th Geoscience Symposium, Bucharest, Romania, 2020.
30. Visan, V., Cioflan, C.O., **Manea, E. F.**, Moldovan, I., Toma-Danila, D. Development of the first macroseismic intensity dataset for crustal activity in Romania . The 5th Geoscience Symposium, Bucharest, Romania, 2020.
31. **Manea, E. F.**, Győri, E., Coman, A., Cioflan, C.A., Radulian, M., Kovács, I.J. Single station analysis of microseismic noise in the Pannonian Basin. Understanding the multi-scale formation and evolution of orogens and sedimentary basins. ILP Task Force on Sedimentary Basins, 15-19 October 2019, Heviz, Hungary.
32. **Manea, E. F.**, Győri, E., Coman, A. Shallow structure in the Pannonian Basin from ambient noise measurements. Topo-Transylvania meeting, 13 October 2019, Heviz, Hungary
33. **Manea, E. F.**, Danciu, L., Cioflan, C.O. Single-Station Sigma Analysis for Romanian Seismic Network, Current and Future Challenges in Engineering Seismology, Seismological Society of America Annual Meeting, California, Seattle, Washington, USA, April, 2019
34. **Manea, E. F.**, Danciu, L., Manea, L., Cioflan, C.O., Ionescu, C. Exploratory analysis of new GMPE's using small/moderate crustal events in Romania. PSHA Workshop, 5 to 7 September 2017 in Lenzburg, Switzerland.
35. **Manea, E. F.**, Michel, C., Hobigger, M., Poggi, V., Cioflan, C.O., Fäh, D., Marmureanu, A. New steps towards local seismic hazard assessment of Bucharest (Romania). Joint Scientific Assembly of the International Association of Geodesy and the International Association of Seismology and Physics of the Earth's Interior (IAG-IASPEI), 2017, Kobe, Japonia
36. **Manea, E. F.,** Predoiu, A., Cioflan, A., Diaconescu, M., Grecu, B. Fundamental frequency of resonance identification for Scythian and Moldavian Platforms. The 6th National Conference on

Earthquake Engineering and the 2nd National Conference on Earthquake Engineering and Seismology - 6CNIS & 2CNISS, 2017, Bucharest, Romania.

37. **Manea, E. F.,** Manea, L., Marmureanu, Gh., Cioflan C.O. Modelling the seismic ground motion induced by crustal sources in Romania. The 6th National Conference on Earthquake Engineering and the 2nd National Conference on Earthquake Engineering and Seismology - 6CNIS & 2CNISS, 2017, Bucharest, Romania.
38. **Manea, E. F.,** Michel, C., Fäh, D., Cioflan, C. O. 3D geophysical model for Bucharest metropolitan area. The 6th National Conference on Earthquake Engineering and the 2nd National Conference on Earthquake Engineering and Seismology - 6CNIS & 2CNISS, 2017, Bucharest, Romania.
39. **Manea, E. F.**, Hobiger, M. T, Michel, C., Fäh, D., Cioflan, C. O. Analysis of the seismic wavefield in the Moesian Platform (Bucharest area)", European Geosciences Union, 2016, Vienna, Austria.
40. **Manea, E. F.**, Michel, C., Fäh, D., Cioflan, C. O. (2016) Mapping the geophysical bedrock of the Moesian Platform using H/V ratios and borehole data. European Geoscience Union, 2016, Vienna, Austria.
41. **Manea, E. F.**, Michel, C., Poggi, V., Fah, D., Cioflan, C.O. Bucharest geophysical model derived from complex interpretation of s-waves propagation. Geoscience, 2016, Bucharest, Romania.
42. **Manea, E. F.,** Michel, C., Fäh, D., Edwards, B., Poggi, V., Cioflan, C. O., Radulian, M., Balan, S. F. (2015) Improvement of the Shear Wave Velocity Structure Beneath Bucharest (Romania) Using Non-Invasive Techniques, SSA Annual Meeting, 2015, Pasadena, California, USA.
43. **Manea, E. F.**, Toma-Danila, D., Cioflan, C.O., Mărmureanu, G. Steps in Seismic Risk Mapping for Romania Capital City. International School and Workshop on Nonlinear Mathematical Physics and Natural Hazards, 28.11-02.12.2013, BAS-Sofia, Bulgaria
44. **Manea, E. F.** Seismic risk analysis for extra-Carpathian area of Romania. Young Seismologists and Engineers Training Course (YSTEC), conference Second European Conference on Earthquake Engineering and Seismology, 2014, Istanbul, Turkey.
45. **Manea, E. F.**, Toma-Danila, D., Cioflan, C.O, Marmureanu, Gh., Radulian, M., Balan, S. F. Seismic risk analysis for extra-Carpathian area of Romania, considering Vrancea intermediate-depth source. Second European Conference on Earthquake Engineering and Seismology, 2014, Istanbul, Turkey.
46. Coman, A., **Manea, E. F.** (**presenting author**), Cioflan, C.A., Radulian, M. Investigations of the sedimentary structure along Transylvanian Basin. Understanding the multi-scale formation and evolution of orogens and sedimentary basins ILP Task Force on Sedimentary Basins, 15-19 October 2019, Heviz, Hungary.
47. Coman, A., **Manea, E. F.**, Cioflan, C.A., Radulian, M. Mapping the fundamental frequency on the Moesian Platform using single station analysis. 10th Congress of the Balkan Geophysical Society, September 18-22, 2019 in Albena Resort, Bulgaria
48. Coman, A., **Manea, E. F.**, Cioflan, C.O., Radulian, M. Mapping the fundamental frequency on the Moesian Platform using single station analysis. University of Bucharest, Faculty of Physics, June 2019, Magurele, Romania
49. Moldovan, I.A., Constantin, A. P., Ardeleanu, L., Ionescu, C., Grecu, B., Manea, L., M., Toma Danila, D., Toader, V.-E., Partheniu, R., **Manea, E. F.**, Tiganescu, A., Placinta, A. O. Macroseismic intensity estimation from instrumental ground motion recordings in the case of small and moderate Vrancea subcrustal earthquakes. 5th World multidisciplinary Earth sciences symposium, Prague Czech Republic, September, 2019
50. Constantin, A. P., Moldovan, I. A., Partheniu, R., **Manea, E. F.**, Ionescu, C. Testing and developing the macroseismic intensity attenuation relationships for the Vrancea (Romania)

crustal earthquakes. 5th World multidisciplinary Earth sciences symposium, Prague, Czech Republic, September, 2019

51. Moldovan, I.A., Constantin, A. P., Ardeleanu, L., **Manea, E. F.**, Partheniu, R., Constantinescu, E.G. Macroseismic intensity attenuation laws for large Vrancea (Romania) intermediate earthquakes. 19th International Scientific GeoConference SGEM, Albena, Bulgaria, July, 2019
52. Toma-Danila, D., Cioflan, C.O., **Manea, E. F.** Estimating the impact of strong earthquakes on the Romanian road network, 16th European Conference on Earthquake Engineering, September, 2018, Thessaloniki, Greece.
53. Mărmureanu, Gh., Mărmureanu, Al. , Cioflan, C.O. , Ionescu, C., **Manea, E. F.** New evidences to sustain nonlinear seismology approach in some areas subjected to strong Vrancea earthquakes. 16th European Conference on Earthquake Engineering, September, 2018, Thessaloniki, Greece.
54. Coman, A., **Manea, E. F.**, Predoiu, A., Cioflan, C.O., Panaiotu, C. Variability of the fundamental frequency of resonance along Pannonian Platform. Bucharest University Faculty of Physics, June 2018, Magurele, Romania
55. Paulescu, D. N., Oros, E., Radulian, M., **Manea, E. F. (presenting author)** Romanian network of analog seismograms: contribution to improve global earthquake. Joint Scientific Assembly of the International Association of Geodesy and the International Association of Seismology and Physics of the Earth's Interior (IAG-IASPEI), 2017, Kobe, Japonia
56. Marmureanu, G., Cioflan, C.O., Marmureanu, A., Ionescu, C., **Manea, E. F.** How Long Time Will We Go with so Many Uncertainties in Evaluation of Seismic Hazard? The 6th National Conference on Earthquake Engineering and the 2nd National Conference on Earthquake Engineering and Seismology - 6CNIS & 2CNISS, 2017, Bucharest, Romania.
57. Răcănel, I., Cioflan, C.O., Răcănel, C., Toma-Danila, D., **Manea, E. F.** Use of incremental dynamic analysis approach for establishing the performance level of a composite bridge. The 6th National Conference on Earthquake Engineering and the 2nd National Conference on Earthquake Engineering and Seismology - 6CNIS & 2CNISS, 2017, Bucharest, Romania.
58. Moldovan, I.A., Constantin, A. P., **Manea, E. F.** Macroseismic intensity attenuation laws for Vrancea intermediate depth earthquakes. The 6th National Conference on Earthquake Engineering and the 2nd National Conference on Earthquake Engineering and Seismology - 6CNIS & 2CNISS, 2017, Bucharest, Romania.
59. Toma-Danila, D., Cioflan, C.O., Armas, I., **Manea, E. F.** The contribution of GIS to seismology. Case study: the assessment of seismic hazard and risk in Romania. The 6th National Conference on Earthquake Engineering and the 2nd National Conference on Earthquake Engineering and Seismology - 6CNIS & 2CNISS, 2017, Bucharest, Romania.
60. Rogozea, M.-M., Moldovan, I.A., Constantin, A. P., **Manea, E. F.**, Cioflan, C.O., Manea, L. Testing the macroseismic intensity attenuation laws for Vrancea intermediate depth earthquakes. The 6th National Conference on Earthquake Engineering and the 2nd National Conference on Earthquake Engineering and Seismology - 6CNIS & 2CNISS, 2017, Bucharest, Romania.
61. Moldovan, I.A., Constantin, A. P., **Manea, E. F.**, Cioflan, C.O., Bogdan, G., Placinta, O., Anghel, A. Comparison between macroseismic and instrumental intensities for recent Vrancea (Romania) moderate earthquakes. The World Multidisciplinary Earth Sciences Symposium, 2017, Prague, Czech Republic.
62. Manea, L., Constantin, A. P., Moldovan, I. A., Rogozea, M.-M., Bogdan, G., **Manea, E. F.**, Ionescu, C. Internet macroseismology in Romania. Technical Workshop On Internet Macroseismology, 2017, Ljubljana, Slovenia.
63. Grecu, B., Zaharia, B., **Manea, E. F.**, Neagoe, C., Borleanu, F., Diaconescu M., Constantinescu, E., Bala, A. Site characterization of the Romanian Seismic Network stations: a national initiative and its first preliminary results. European Geosciences Union, 2017, Vienna, Austria.

64. Mărmureanu, Gh., Cioflan, C.O., Mărmureanu, A., **Manea, E. F.** and Ionescu, C. How long time will we go with so many uncertainties in the evaluation of hazard and seismic risk. 35rd General Assembly of the European Seismological Commission, 2016, Trieste, Italia
65. Grecu B., **Manea E. F.**, Neagoe C., Diaconescu M., Zaharia B., Tataru D. Multidisciplinary characterization of Romanian seismic station sites for a better estimation of seismic hazard. International Scientific GeoConference SGEM, 2016, Albena, Bulgaria
66. Mărmureanu, Gh., Cioflan, C.O., Mărmureanu, A., Ionescu, C., **Manea, E. F.** and Toma-Danila, D. Nonlinear seismology, the seismology of this century. 35rd General Assembly of the European Seismological Commission, 2016, Trieste, Italy.
67. Anghel, A., **Manea, E. F.**, Constantin, A. P., Manea, L., Partheniu, R., & Moldovan, I. A. Near real time estimation of the macroseismic intensity in case of 5.3 mw Vrancea Intermediate depth earthquakes. Geoscience, 2016, Bucharest, Romania.
68. Mărmureanu, Gh., Cioflan, C.O., Mărmureanu, A. and **Manea, E. F.** Main characteristics of November 10, 1940 strong Vrancea earthquake in seismological and physics of earthquake terms; National Symposium: 75 years from November 10th 1940 Vrancea Earthquake, 2015, Bucharest, Romania.
69. Toma-Danila D., Cioflan C.O., **Manea E. F.** Seismic loss estimates for scenarios of the 1940 Vrancea earthquake. National Symposium: 75 years from November 10th 1940 Vrancea Earthquake, 2015, Bucharest, Romania.
70. Mărmureanu, Gh., Mărmureanu, A., Cioflan, C.O., **Manea, E. F.** Uncertainties in evaluation of hazard and seismic risk. European Geoscience Union, 2015, Vienna, Austria.
71. Toma-Danila, D., Zulfikar, C., **Manea, E. F. (presenting author)** Adapting seismic loss estimation software to local conditions – Vrancea intermediate - depth earthquakes case study. Second European Conference on Earthquake Engineering and Seismology, 2014, Istanbul, Turkey.
72. Toma-Danila, D., **Manea, E. F.**, Cioflan, C.O. Improved seismic risk estimation for Bucharest, based on multiple hazard scenarios, analytical methods and new techniques. European Geoscience Union, 2014, Vienna, Austria.
73. Mărmureanu, Gh., Cioflan, C.O., Mărmureanu, A. and Manea, E.F. How long will we go with so many uncertainties in the evaluation of hazard and seismic risk? BestPSHANI workshop, 2014, Vienna, Austria.
74. Mărmureanu, Gh., Cioflan, C.O., Mărmureanu, A., Ionescu, C. and **Manea, E. F.** The real evidence of effects from source to freefield as base for nonlinear seismology. European Geoscience Union, 2014, Vienna, Austria.
75. Mărmureanu, Gh., Cioflan, C.O., Mărmureanu, A., Ionescu, C., Toma-Danila, D. and **Manea, E. F.** Uncertainties in evaluation of hazard and seismic risk over time in Romania. Second International Conference on „Natural and anthropic risks – ICNAR 2014", 2014, Bacau, Romania.
76. Mărmureanu, Gh., Cioflan,C.O., Mărmureanu, Al., Ionescu, C., **Manea, E. F.** Bridging the gap between nonlinear seismology as reality and earthquake engineering. Second European Conference on Earthquake Engineering and Seismology, 2014, Istanbul, Turkey.
77. Mărmureanu, Gh., Cioflan,C.O., Mărmureanu, Al., Ionescu, C., **Manea, E.F.** Nonlinear Seismology and the Implications on Engineering Seismology and Earthquake Engineering. European Geoscience Union, 2014, Vienna, Austria.
78. Mărmureanu, Gh., Cioflan, C.O., Mărmureanu, A., Ionescu, C. and **Manea, E. F.** Nonlinear site effects in real time shakemap generation as part of risk reduction. European Geoscience Union, 2014, Vienna, Austria.

79. Toma-Danila D., Cioflan C.O., Balan S.F., **Manea E. F.** Characteristics and results of the near real-time system for estimating the seismic damage of Romania, The 5th National Conference of Earthquake Engineering and The 1st National Conference on Earthquake Engineering and Seismology, 2014, Bucharest, Romania.
80. Mărmureanu, Gh., Cioflan, C.O., Mărmureanu, A. and **Manea, E. F.** Nonlinear seismology – a reality. Bridging the gap between this reality and earthquake engineering, The 5th National Conference of Earthquake Engineering and The 1st National Conference on Earthquake Engineering and Seismology, 2014, Bucharest, Romania.