



Elena Russo

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PROFESSIONAL SUMMARY

Structural geologist with expertise on investigating the relations between magmatic processes, seismicity distribution and brittle deformation in the upper crust within active volcano-tectonic environments, through multidisciplinary approaches.

SKILLS

- Conducting research
- Preparing reports
- Problem resolution
- Relationship development
- Geophysical data interpretation
- Rock structures determination
- Scientific language knowledge
- Stress modeling
- Technical-scientific writing
- Knowledgeable in MATLAB
- Midland Valley 2D Move
- Photoshop, Inkscape and Corel Draw
- MS Office
- ArcGIS and QGIS mastery
- Mapping
- Results analysis
- Verbal and written communication
- Research abilities
- Data collection and organization
- Interdisciplinary Coordination

WORK HISTORY

PHD CANDIDATE IN STRUCTURAL GEOLOGY 11/2017 to CURRENT
University of Milan-Bicocca | Milan, Italy

Thesis title: *The anomaly of rift-parallel transcurrent faults.*

TECHNICAL TRAINING: MAGMA-INDUCED DEFORMATION 05/ to 06/2019
Geological Survey of Japan | Tsukuba, Japan

- Training on numerical analysis of ground deformation using a visco-elastic model of volcanic edifice and the Earth's crust.
- Analysis of deformation of representative caldera volcanoes.

RESEARCH SCHOLARSHIP 01/2017 to 01/2018
University of Milan-Bicocca | Milan, Italy

Structural and seismological data collection for 3D reconstruction of tectonically active areas.

SCIENTIFIC JOURNALIST 10/2014 to 04/2015
Class TV | Milan, MI

- Preparing in-depth analysis on topics regarding geology and the environment.
- Organized material, determined area of emphasis, and wrote stories according to prescribed editorial style and format standards.

EDUCATION

○ **Master of Science** | Geological Sciences 07/2014
University of Milan-Bicocca, Milan, Italy
Thesis title: *Evaluation of the evolving stress field of the Yellowstone volcanic plateau from 1988 to 2010 from earthquake first motions inversion.*

○ **Master of Science** | Volcanology And Geotechniques 07/2014
Michigan Technological University, Houghton, Michigan, USA
Double degree exchange program Atlantis - INVOGE

○ **Bachelor of Science** | Geological Sciences 03/2011
University Of Milan-Bicocca, Milan, Italy

CERTIFICATIONS

○ TOEFL iBT English Certificate. Score: 111/120 (C1 or above).

ATTENDED CONFERENCES

- • *October 2016*, Clermont Ferrand: ILP conference 'From deep Earth to surface processes: integrating lithosphere dynamics with rift basins and margins'. Title of my presentation: 'Evaluation of the evolving stress field of the Yellowstone volcanic plateau from 1988 to 2010 from earthquake first motions inversion'
- • *April 2018*, EGU Meeting, Vienna, Austria. Title of my presentation: 'Evolving stress field at Yellowstone from 1988 to 2010 and relation with emplacement of sills'
- • *September 2018*, NATO MEETING SfP G4934, Tbilisi, Georgia. 'Security against geohazards at the major Enguri hydroelectric scheme in Georgia'
- • *April 2019*, EGU Meeting, Vienna, Austria. Title of my presentation: 'Seismicity and magma intrusions at Yellowstone supervolcano: new insights'
- • *May 2019*, GSJ Volcanology seminar, Tsukuba, Japan. Title of my presentation: 'The anomaly of rift-parallel transcurrent faults: examples from Yellowstone and Iceland'
- • *July 2019*, CRUST Congress, Perugia, Italy. Title of my poster: 'New findings by recent seismic data and Coulomb stress transfer in the Yellowstone region'
- • *October 2019*, NATO Advanced Research Workshop G5566, Tbilisi, Georgia. Title of my presentation: 'Recent tectonic stress field and deformations in the Rioni Basin region, Georgia'
- • *February 2020*, IV Rittman Conference, Catania, Italy, Title of my presentation: 'New insights on dyke-induced surface deformation revealed by UAV-based high resolution model'
- • *May 2020*, EGU Online. Title of my presentations: 'Advances in field data collection in volcano-tectonic sensitive areas: examples and results from the Northern Volcanic Zone of Iceland'

PUBLICATIONS

- • Russo, E., Waite, G. P., and Tibaldi, A. (2017). Evaluation of the evolving stress field of the Yellowstone volcanic plateau, 1988 to 2010, from

- earthquake first-motion inversions. *Tectonophysics*, 700, 80-91.
- Tibaldi, A., Russo, E., Bonali, F. L., Alania, V., Chabukiani, A., Enukidze, O., and Tsereteli, N. (2017). 3-D anatomy of an active fault-propagation fold: A multidisciplinary case study from Tsaishi, western Caucasus (Georgia). *Tectonophysics*, 717, 253-269.
 - Tibaldi, A., Bonali, F. L., Pasquarè Mariotto, F., and Russo, E. (2017). Differentiating lava slip planes from tectonic faults: A key issue in structural geology. *Global and Planetary Change*.
 - Varazanashvili, O., Tsereteli, N., Bonali, F.L., Arabidze, V., Russo, E., Pasquarè Mariotto, F., Gogoladze, Z., Tibaldi, A., Kvavadze, N. and Oppizzi, P., 2018. Geolnt: the first macroseismic intensity database for the Republic of Georgia. *Journal of Seismology*, 22(3), pp.625-667.
 - Tibaldi, A., Bonali, F. L., Russo, E., and Pasquarè Mariotto, F. (2018). Structural development and stress evolution of an arcuate fold-and-thrust system, southwestern Greater Caucasus, Republic of Georgia. *Journal of Asian Earth Sciences*, 156, 226-245.
 - Bonali, F. L., Tibaldi, A., Mariotto, F. P., and Russo, E. (2018). Interplay between inherited rift faults and strike-slip structures: Insights from analogue models and field data from Iceland. *Global and Planetary Change*.
 - Gerloni, I. G., Carchiolo, V., Vitello, F. R., Sciacca, E., Becciani, U., Costa, A., and Marchese, F. (2018, September). Immersive Virtual Reality for Earth Sciences. In 2018 Federated Conference on Computer Science and Information Systems (FedCSIS) (pp. 527-534). IEEE.
 - Bonali, F. L., Tibaldi, A., Marchese, F., Fallati, L., Russo, E., Corselli, C., and Savini, A. (2019). UAV-based surveying in volcano-tectonics: An example from the Iceland rift. *Journal of Structural Geology*, 121, 46-64.
 - Tibaldi, A., Bonali, F. L., Pasquarè Mariotto, F., Russo, E., and Tenti, L. R. (2019). The development of divergent margins: Insights from the North Volcanic Zone, Iceland. *Earth and Planetary Science Letters*, 509, 1-8.
 - Krokos, M., Bonali, F., Vitello, F., Antoniou, V., Becciani, U., Russo, E., and Sciacca, E. (2019). Workflows for virtual reality visualisation and navigation scenarios in earth sciences.
 - Russo, E., Tibaldi, A., Waite, G. P., Bonali, F. L., Massin, F., Farrell, J., 2020. Unraveling the complex deformation pattern at Yellowstone plateau through seismicity and fracture analysis. *Tectonophysics*, 778, 228352.
 - Tibaldi, A., Bonali, F. L., Pasquarè Mariotto, F., Corti, N., Russo, E., Einarsson, P., Hjartardóttir, Á. R., 2020. Rifting Kinematics Produced by Magmatic and Tectonic Stresses in the North Volcanic Zone of Iceland. *Frontiers in Earth Science*, 8, 174.
 - Tibaldi, A., Bonali, F. L., Russo, E., and Fallati, L. (2020). Surface deformation and strike-slip faulting controlled by dyking and host rock lithology: A compendium from the Krafla Rift, Iceland. *Journal of Volcanology and Geothermal Research*, 106835.

- Bonali, F. L., Tibaldi, A., Corti, N., Fallati, L., and Russo, E. (2020). Reconstruction of Late Pleistocene-Holocene Deformation through Massive Data Collection at Krafla Rift (NE Iceland) Owing to Drone-Based Structure-from-Motion Photogrammetry. *Applied Sciences*, 10(19), 6759.
- Bonali F.L., Corti N., Russo E., Marchese F., Fallati L., Pasquarè Mariotto F., Tibaldi A., 2020. Commercial-UAV-based Structure from Motion for geological and geohazard studies. In: Building knowledge for geohazard assessment and management in the Caucasus and other orogenic regions, NATO Science for Peace and Security Series, Springer (in press).
- Tibaldi A., Babayev G., Bonali F.L., Pasquarè Mariotto F., Russo E., Tsereteli N., Corti N., 2020. Active kinematics of the Greater Caucasus from seismological and GPS data: A review. In: Building knowledge for geohazard assessment and management in the Caucasus and other orogenic regions, NATO Science for Peace and Security Series, Springer (in press).

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Legislative Decree n° 196/2003*