

# Dr. Roberto Emanuele Rizzo

## ESPERIENZA LAVORATIVA

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- **Università degli Studi di Firenze** Firenze, Italia  
*Ricercatore Tempo Determinato* Feb. 2022 - Presente
- **University of Edinburgh** Edinburgh, United Kingdom  
*Post-Doc* Feb. 2021 - Gen. 2020
- **Heriot-Watt University** Edinburgh, United Kingdom  
*Post-Doc* Gen. 2020 - Feb. 2021
- **University of Aberdeen** Aberdeen, United Kingdom  
*Post-Doc* Sett. 2018 - Ago. 2019
- **The University of Manchester** Manchester, United Kingdom  
*Post-Doc* Ott. 2017 - Mag. 2018

## STUDI UNIVERSITARI

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- **Dottorato - PhD**, University of Aberdeen, Aberdeen, United Kingdom  
Inizio: Ottobre 2013 — Fine: Novembre 2017
- **Laurea Magistrale in Geofisica e Geologia**, Università degli Studi di Bari, Bari, Italia  
Inizio: Settembre 2009 — Fine: Agosto 2012
- **Laurea Triennale Geologia**, Università degli Studi di Bari, Bari, Italia  
Inizio: Settembre 2005 — Fine: Agosto 2009

## RICONOSCIMENTI SCIENTIFICI

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- **EGU Outstanding Early Career Scientist Awards – 2024**  
Awarded by the Energy, Resources and Environment Division of EGU
- **Ramsay Medal – 2019**  
Awarded by the Tectonics Studies Group for best Paper on Structural Geology and Tectonics published in 2018.
- **AGU Outstanding Student Paper Awards – 2016**  
Awarded for best PhD poster presentation

## PUBBLICAZIONI SCIENTIFICHE

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1. **Rizzo, R.E.**, Freitas, D., Gilgannon, G., Seth, S., Butler, I.B., McGill, G.E., & Fusses, F., 2024. Using Internal Standards in Time-resolved X-ray Micro-computed Tomography to Quantify Grain-scale Developments in Solid State Mineral Reactions. *Solid Earth*.

2. **Rizzo, R.E.**, Forbes Inskip, N., Fazeli, Betlem, H., Bisdom, K., Kapman, N., Snippe, J., Senger, K., Dorster, F., & Busch., A., 2024. Modelling Geological CO2 Leakage: Integrating Fracture Permeability and Fault Zone Outcrop Analysis.  
*International Journal of Greenhouse Gas Control*.
3. Gilgannon, J., Freitas, D., **Rizzo, R.E.**, Wheeler, J., Butler, I.B., Seth, S., Marone, F., Schlepütz, C.M., McGill, G.E., Watt, I., Plümper, O., Eberhard, L., Amiri, H., Chogani, A., & Fousseis, F., 2023. Elastic stresses can form metamorphic fabrics.  
*Geology*.
4. Freitas, D., Butler, I.B., Elphick, S.C, Gilgannon, J., **Rizzo, R.E.**, Plumper, O., Wheeler, J., Schlepütz, C.M., Marone, F., & Fousseis, F., 2023. Heitt Mjolnir: heated miniature triaxial apparatus for 4D synchrotron microtomography.  
*Journal of Synchrotron Radiations*.
5. Busch, A., Hangx, S., Vialle, S., **Rizzo, R. E.**, & Kampman, N., 2023. Mechanical weakening of a mudrock seal by reaction with CO2-charged fluids.  
*Geology*.
6. Cartwright-Taylor, A., Mangriotis, M.D., Main, I.G., Butler, I.B., Fousseis, F., Ling, M., Andò, E., Curtis, A., Bell, A.F., Crippen, A., & **Rizzo, R.E.**, 2022. Seismic events miss important kinematically governed grain scale mechanisms during shear failure of porous rock.  
*Nature Communications*
7. **Rizzo, R.E.**, Fazeli, H., Dorster, F., Bisdom, K., Kapman, N., Snippe, J., Senger, K., Betlem, P., & Busch., A., 2021. The role of fault and fracture networks to de-risk geological leakage from subsurface CO2 storage sites.  
*EAGE*
8. Porfido, C., **Rizzo, R.E.**, Healy, D., Spagnuolo, M., Terzano, R. & Allegretta, I., 2021. Investigating the evolution of fractures in clay-based ceramics during repeated freeze-thawing cycles using X-ray micro-computed tomography and image analysis.  
*Materials Characterization*.
9. Palladino, G., **Rizzo, R.E.**, Zvirtes, G., Grippa A., Hurst, A., Phillip, R.P., Healy, D., & Alsop, G.I., 2020. Multiple episodes of sand injection leading to top seal failure: An outcrop study of the Santa Cruz Injection Complex, California.  
*Marine & Petroleum Geology*
10. **Rizzo, R.E.**, Healy, D., Heap, M.J., & Farrell, N.J.C. 2018. Detecting the Onset of Strain Localisation using two-dimensional Wavelet Analysis on Sandstones Deformed at Different Effective Pressures.  
*Journal of Geophysical Research – Solid Earth*
11. Chandler, M.R., Fauchille, A.-L., Kim, H.K., Ma, L., Mecklenburgh, J., **Rizzo, R.E.**, Mostafavi, M., Marussi, S., Atwood, R., May, S., Azeem, M., Rutter, E., Taylor, K., & Lee, P., 2018. Correlative optical and X-ray imaging of strain evolution during Double Torsion Fracture Toughness measurements in shale.  
*Journal of Geophysical Research – Solid Earth*

12. Healy, D., **Rizzo, R.E.**, Duffy, M., Farrell, N., Hole, M., & Miurhead, D., 2018. Field evidence for the lateral emplacement of igneous dykes: Implications for 3D mechanical models and the plumbing beneath fissure eruptions.  
*Volcanica*.
13. **Rizzo, R.E.**, Healy, D., Farrell, N.J.C., & Heap, M.J., 2017. Riding the right wavelet: Quantifying scale transitions in fractured rocks.  
*Geophysical Research Letters*.
14. **Rizzo, R.E.**, Healy, D. & de Siena, L., 2017. Benefits of Maximum Likelihood Estimators in Predicting Bulk Permeability and Up-scaling Fracture Networks.  
*Journal of Structural Geology*.
15. Healy, D., **Rizzo, R.E.**, Cornwell, D.G., Farrell, N.J.C., Watkins, H., Timms, N.E., Gomez- Rivas, E., & Smith, M., 2017. FracPaQ: a MATLAB toolbox for the quantification of fracture pattern.  
*Journal of Structural Geology*.