Miller Zambrano

PERSONAL STATEMENT:

Miller Zambrano is a Geoscientist holding a PhD in Structural Geology (University of Camerino, Italy) and a Degree in Geophysical Engineering (Central University of Venezuela) with experience in petroleum exploration and academic research. Main work skills include exploration geophysics and structural geology with high interest for geothermal energy and CO2 sequestration.

EDUCATION:

2016 | **PhD Earth Sciences** | University of Camerino. Italy

- The research was focused on geological modelling and fluid flow in deformed porous and tight carbonates from the pore-scale to the seismic-scale through the integration of fracture modelling, field structural geology, fluid flow simulation, computational fluid dynamics.
- Erasmus Intern in the Heat and Mass Transfer Technological Center-Polytechnic University of Catalonia, Spain.

2008 | **Geophysicist Engineer** | Central University of Venezuela

- The dissertation (approved with honours) was focused on seismic interpretation in an area of the Maracaibo Basin. The work was integrated to an actual oil exploration project and considered for defining new prospects.
- Teaching assistance in near-surface seismic methods (2 semesters).

WORK EXPERIENCE:

Oct. 2017 – Current | **Researcher** (fix-term contract) | University of Camerino. Italy

- Research focused on (oil, geothermal) reservoirs characterization at different scale. At the microscale, I mainly study the 3D pore networks by using microCT data. At the macroscale, I conduct seismic interpretation integrated with well data analysis, generation of synthetic seismic, regional outcrop-based fracture analysis and modelling. I also contribute to near-surface geophysics surveys focused on hydrogeology evaluation.
- Teaching two courses in the master program (in English) Geofluids Reservoir and Seismic Data Interpretation. Supervisor of more than 10 master thesis students and trainees.

Dec. 2015 – Dec. 2016 | **Research Fellow** | University of Camerino. Italy

- The research was focused to applied computational fluid dynamics (Lattice-Boltzmann) simulation in deformed porous carbonates using high resolution X-ray tomographic images.

2008 – 2012 | **Exploration Geophysicist - Seismic Interpreter** | PDVSA (Venezuelan Oil Company)

- Responsible of evaluating and exploring new oil plays and prospects by implementing the interpretation of 2D and 3D seismic data (Offshore/Onshore) in different structural settings at the regional and prospect scales. Main activities were to generate structural maps and seismic attributes.

PERSONAL SKILLS:

- Experience working in international, multicultural, and multidisciplinary teams.
- Languages: **Spanish** (mother tongue), **English** (fluent), **Italian** (fluent).
- Seismic Interpretation and Fracture Modelling software (Petrel, Move).
- Basic program skills (Matlab, C++, R, Python)
- Driving licence: B

ACADEMIC ACTIVITIES:

- Author of 18 scientific articles (6 as main author), citations 383, H-index 10. A full list of publications in Scopus (ID: 55974536800; Orcid ID: 0000-0002-3963-8744).
- **Main Publications:**
  1. Zambrano, M., *et al.* (2021). Pore-scale dual-porosity and dual-permeability modeling in an exposed multi-facies porous carbonate reservoir. *Marine and Petroleum Geology*, 128, 105004.
  2. Zambrano, M., *et al.* (2019). Analysis of fracture roughness control on permeability using SFM and fluid flow simulations: Implications for carbonate reservoir characterization. *Geofluids*, 2019.
  3. Zambrano, M., *et al.* (2019). Implementation of dynamic neutron radiography and integrated X-ray and neutron tomography in porous carbonate reservoir rocks. *Frontiers in Earth Science*, 7, 329.
  4. Zambrano, M., *et al.* (2018). Fluid flow simulation and permeability computation in deformed porous carbonate grainstones. *Advances in Water Resources*, *115*.
  5. Zambrano, M., *et al.* (2017). 3D Pore-network quantitative analysis in deformed carbonate grainstones. *Marine and Petroleum Geology*, *82*.
  6. Zambrano, M., *et al.* (2016). Fracture properties analysis and discrete fracture network modelling of faulted tight limestones, Murge Plateau, Italy. *Italian Journal of Geosciences*, 135(1), 55-67.
  7. Riegel, H., *et al.* (2019). Petrophysical properties and microstructural analysis of faulted heterolithic packages: a case study from Miocene turbidite successions, Italy. *Geofluids*, 2019.
  8. Mendez, J. N., *et al.* (2019). Fracture characterization and modeling in karsted carbonate reservoirs: A case study in Tahe oilfield, Tarim Basin (western China). *Marine and Petroleum Geology*, 104104.
  9. Volatili, T., *et al.* (2019). From fracture analysis to flow simulations in fractured carbonates: The case study of the Roman Valley Quarry (Majella Mountain, Italy). *Marine and Petroleum Geology*, 100, 95-110.
  10. Panza, E., *et al.* (2016). Fracture stratigraphy and fluid flow properties of shallow-water, tight carbonates: the case study of the Murge Plateau (southern Italy). *Marine and Petroleum Geology,* 73, 350-370.
  11. Panza, E., *et al.* (2015). Structural architecture and Discrete Fracture Network modelling of layered fractured carbonates (Altamura Fm., Italy). *Italian Journal of Geosciences*, 134(3), 409-422.
  12. Antonellini, M., *et al.* (2014). Fluid flow numerical experiments of faulted porous carbonates, northwest Sicily (Italy). Marine and Petroleum Geology, 55, 186-201.
- **Journal reviewer:** AAPG Bulletin; Geofluids; Journal of Structural Geology; Geological Society of London; Journal of Imaging; Journal of Natural Gas Science & Engineering; Marine and Petroleum Geology; Minerals.
- **Grant proposal reviewer:** National Science Center (Funding scheme PRELUDIUM), Poland. 2019.

AWARDS:

- Winner of "Petroleum Geology Student Contest" (event sponsored by Shell Italia E&P), 27th November 2015. Matera, Italy. I presented some results of my PhD research: *"Fault zones characterization and fluid flow numerical experiments in carbonates rocks"*.

Data: 09/06/2021