

Miller Zambrano

PERSONAL STATEMENT:

A Geoscientist holding a PhD in Earth Sciences from the University of Camerino (Italy) and a Degree in Geophysical Engineering from the Central University of Venezuela with experience in petroleum exploration. Fields of interest: structural geology, seismic data analysis, fracture modelling and fluid flow simulation.

EDUCATION:

2012 – 2016 | **PhD Earth Sciences** in “*3D multiscalar geological models and fluid flow simulations in deformed rocks*” | University of Camerino. Italy

- The research was focused on geological modelling and fluid flow in deformed porous and tight carbonate rocks by using of different methods, such as fracture modelling, field structural geology, fluid flow simulation, X-ray microtomography of porous rocks and computational fluid dynamics.

2002 –2008 | **Geophysicist Engineer** | Central University of Venezuela

- The followed courses included general geology and applied geophysics. The dissertation thesis, approved with honours, was focused on seismic interpretation in an area of the Maracaibo Basin. The results of this study brought insights to new exploration possibilities within the basin.

WORK EXPERIENCE:

Sept. 2016 – Dec. 2016 | **Research Grant** | University of Camerino. Italy

- The research aimed to develop computational fluid dynamics simulations (Lattice-Boltzmann method) in deformed porous carbonates using high resolution X-ray microtomography images.

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

- The main goal of this study was to characterize and model natural fractured carbonate reservoirs.

Jul. 2015 – Sept. 2015 | **Erasmus Traineeship** | Heat and Mass Transfer Technological Center-Polytechnic University of Catalonia. Terrassa, Spain

- Activities were concentrated on computational fluid dynamics.

Aug. 2008 – Sept. 2012 | **Seismic Interpreter** | PDVSA (Venezuelan Oil Company)

- As part of a multidisciplinary team, my main responsibility was to evaluate and to discover new plays and prospects by implementing the interpretation of 2D and 3D seismic data of different structural settings.

TEACHING AND SUPERVISING:

- Teaching assistant: course of Geofluid Reservoirs (2015/2016) at University of Camerino.
- Teaching assistant (laboratory and field): course of Seismic Methods (2006-2007) at Central University of Venezuela.
- Co-supervisor of 6 graduate (English) and 1 undergraduate (Italian) theses at the University of Camerino.

PUBLICATIONS:

- *Fluid flow simulation and permeability computation in deformed porous carbonate grainstones.* M. Zambrano, E. Tondi, L. Mancini, G. Lanzafame, F.X. Trias, F. Arzilli, M. Materazzi, S. Torrieri. (Submitted to Advances in Water Resources).
- *3D pore-network quantitative analysis in deformed carbonate grainstones.* M. Zambrano, E. Tondi, L. Mancini, F. Arzilli, G. Lanzafame, M. Materazzi, S. Torrieri. Marine and Petroleum Geology, Vol. 82 (2017), 251-264. DOI: <http://dx.doi.org/10.1016/j.marpetgeo.2017/02/001>.
- *Fracture stratigraphy and fluid flow properties of shallow-water, tight carbonates: The case study of the Murge Plateau (southern Italy).* Panza E., Agosta F., Rustichelli A., Zambrano M., Tondi E., Prosser G., Giorgioni M., Janiseck J.M. Marine and Petroleum Geology, 73 (2016), 350-370. DOI: 10.1016/j.marpetgeo.2016.03.022
- *Fracture properties analysis and discrete fracture network modelling of faulted tight limestones, Murge Plateau, Italy.* Zambrano M., Tondi E., Korneva I., Panza E., Agosta F., Janiseck J.M., Giorgioni M. Ital. J. Geosci., Vol. 135, No. 1 (2016), pp. 55-67 (DOI: 10.3301/IJG.2014.42)
- *Structural architecture and Discrete Fracture Network modelling of layered fractured carbonates (Altamura Fm., Italy).* Panza E., Agosta F., Zambrano M., Tondi E., Prosser G., Giorgioni M., Janiseck J.M. Ital. J. Geosci., Vol. 134, No. 3 (2015), 409-422, (DOI: 10.3301/IJG.2014.28)
- *Fluid-flow numerical experiments of faulted porous carbonates, Northwest Sicily (Italy).* Antonellini M., Cilona A., Tondi E., Zambrano M., Agosta F. Marine and Petroleum Geology 55 (2014), 186-201. DOI:10.1016/j.marpetgeo.2013.12.003

CONFERENCE PAPERS:

- *3d pore-network analysis and permeability estimation of deformation bands hosted in carbonate grainstones.* Zambrano M., Tondi E., Mancini L., Trias F.X., Arzilli F., Lanzafame G. & Aibibula N. In: Geophysical Research Abstracts Vol. 18, EGU2016-13382, 2016. EGU General Assembly 2016.
- *From fracture analysis to flow simulations of fractured carbonates: the case study of Roman Valley Quarry.* Volatili T., Zambrano M., Cilona A., Huisman B.A.H., Tondi E. & Giorgioni M. Rend. Online Soc. Geol. It., Suppl. n. 1 al Vol. 40, 2016. 88° Congresso SGI, Napoli 2016.
- *Quantitative Analysis of Pore-Network and Permeability Estimation in Deformed Porous Carbonate Grainstones.* Zambrano M., Tondi E., Mancini L., Lanzafame G., Trias F.X. & Arzilli F. Rend. Online Soc. Geol. It., Suppl. n. 1 al Vol. 40, 2016. 88° Congresso SGI, Napoli 2016
- *Fracture properties analysis and discrete fracture network modelling of faulted tight limestones, Murge plateau, Italy.* Zambrano M., Tondi E., Korneva I., Panza E., Agosta F., Janiseck J.M. & Giorgioni M. In: Geophysical Research Abstracts Vol. 17, EGU2015-760, 2015 EGU General Assembly 2015.
- *Multi-scale fracture networks within layered shallow water tight carbonates.* Panza E., Agosta F., Rustichelli A., Vinciguerra S., Zambrano M., Prosser G. & Tondi E. In: Geophysical Research Abstracts Vol. 17, EGU2015-442, 2015 EGU General Assembly 2015
- *Fault zones characterization and fluid flow numerical experiments in carbonate rocks.* Zambrano M., Rend. Online Soc. Geol. It. Suppl. N. 1 al Vol. 37, 2015. Petroleum Geology Contest, 27 November 2015, Matera, Italy.
- *Discrete Fracture Network Modelling of Faulted and Fractured Apulian Platform Carbonates (Altamura Formation, Southern Italy).* Giorgioni M., Panza E, Agosta F., Zambrano M. & Tondi E. International Petroleum Technology Conference, 6-9 December, 2015, Doha, Qatar DOI:10.2523/IPTC-18349-MS
- *Discrete fracture network modelling of faulted upper Cretaceous limestones, Murge Plateau, Italy.* Zambrano M., Tondi E., Korneva I., Panza E., Agosta F., Janiseck J.M. & Giorgioni M. In: Book of Abstract, 4th Scientific Day School of Science and Technology. June 11, 2014 Camerino, Italy. ISBN: 9788867680177.

OTHER CONTRIBUTIONS:

- *3D image analysis of deformation bands in porous carbonate grainstones.* Zambrano M., Tondi E., Mancini L., Dinolfo G., Aibibula N., Arzilli F., Napoli G. Joint Assembly AGU-GAG-MAC-CGU. Montreal Canada, May 2015.
- *Discrete fracture network modelling of faulted and fractured Apulian platform carbonates (Altamura Formation, southern Italy).* Panza E., Zambrano M., Korneva I., Agosta F., Tondi E. Reducing Subsurface Uncertainty & Risk through Field-Based Studies. The Geological Society, Burlington House, Piccadilly 2014, London.
- *Deformation mechanisms and hydraulic properties of normal and strike-slip fault zones in porous carbonates outcropping in central and southern Italy.* Tondi E., Balsamo F., Napoli G., Storti F., Agosta F., Renda P., Zambrano M., Cilona A. & Antonellini M. Mesozoic and Cenozoic carbonates of the Neo-Tethys: old and new concepts for petroleum exploration. AAPG European Region - Naples, 25th-26th March 2014.
- *Discrete Fractures Network (DFN) of the faulted Upper Cretaceous platform carbonates outcropping in the Murge area (Altamura Formation, Murge, Italy).* Zambrano M., Tondi E., Korneva E., Agosta F. Mesozoic and Cenozoic carbonates of the Neo-Tethys: old and new concepts for petroleum exploration. AAPG European Region - Naples, 25th-26th March 2014.
- *Tectonic versus gravitational Cretaceous syn-sedimentary faults crosscutting basinal carbonates (Gargano Promontory, Italy).* Korneva, I., Tondi, E., Rustichelli, A., Di Celma, C., Zambrano, M., Jablonska, D., Agosta, F. FIST GEOITALIA 2013 – IX Forum di Scienze della Terra 16-18 September 2013, Pisa.
- *Subsurface characterization of the Apulia Carbonate Platform in the foothills of the Apennines in Abruzzi region (central Italy).* Ebula E., Tondi E., Di Celma C., Di Cuia R., Riva A., Zambrano M., Korneva I. FIST GEOITALIA 2013 – IX Forum di Scienze della Terra 16-18 September 2013, Pisa.
- *Discrete Fractures Network (DFN) of the faulted Upper Cretaceous platform carbonates outcropping in the Pontrelli Quarry (Altamura Formation, Murge, Italy).* Zambrano M., Tondi E., Korneva I., Agosta F. FIST GEOITALIA 2013 – IX Forum di Scienze della Terra 16-18 September 2013, Pisa.

COMPUTING SKILL:

- Seismic Interpretation and Fracture Modelling software: Landmark, Petrel, Move.
- Programming in C++
- Fluid flow simulation software: Palabos
- Photogrammetry: Agisoft Photoscan
- Image analysis software: ImageJ, Pore3D

PERSONAL SKILLS:

- Good verbal and writing communication skills, teaching and multidisciplinary teamwork.
- Languages: **Spanish** (mother tongue), **English, Italian.**
- Volunteer activities as Firefighter (2002-2008) at the fire department of University Central of Venezuela.
- Driving licence B

AWARDS:

- First place of “Petroleum Geology Student Contest”, 27th November 2015. Matera, Italy.
- Research grants (Dec.2015 and Sept. 2016) by the University of Camerino

Date 04/05/2017

Signature

