

## **BIGONI FRANCESCO CV**

### **EDUCATION & QUALIFICATIONS**

1987 Degree in geological Science (110/110 with honors) at Pavia University

2018 Certificate of attendance to the Eni Teacher Program for training of internal teachers.

### **WORKING EXPERIENCE**

More than 30 years experienced in Oil and Gas industry; from 1989 to 2006 as Carbonate Stratigrapher, then as Reservoir Geologist, in 2009 Reservoir Study Project Coordinator.

Currently Advisor in Carbonate and Fractured Reservoirs.

In the last 15 years involved in Geological modeling of main Eni Assets in Carbonate Reservoir taking advantage of the Stratigraphic, sedimentological and diagenetic competences to be implemented into the Reservoir 3D Modeling.

Dealing with Carbonate Reservoir, the role of the fractures is sometimes highly significant. In this context new technologies and fit-for-purpose Workflows have been developed to better describe Fractured Reservoir. Actually technical support for colleagues dealing worldwide with Fractured Reservoir.

Participation to Eni R&D Projects on Fracture Modeling, on CCUS (Carbon Capture Use and Storage) in Carbonate Lithologies and on Geothermal projects.

### **TEACHING EXPERIENCE:**

Eni Internal Courses:

Eni Carbonate & Fractured Reservoir Experiences (5 days) – yearly course

Eni External Courses:

From 2017 teacher of “Naturally Fractured Reservoir” for Master in Energy Engineering and Operation @ Politecnico di Torino

2020: Seminar about Geological Modeling of Fractured reservoir – Satbayev University Almaty (Kazakhstan)

From 2021 teacher for the course “Fundamentals of subsurface reservoir studies” at University of Pavia for LM plus Geoscience for Sustainable Development

2022/2023 Course on Reservoir Carbonate Modeling @ NCOC, Kazakhstan

2023 Reservoir Geology Graduate Course KPO, Kazakhstan

2023 Reservoir Modeling & Fractured Reservoir @ Master Upstream, Yamoussoukro, Ivory Coast

### **PUBLICATION:**

- R. Ruffino, A. Avanzini, A. Bianco, R. Marino, F. Bigoni, C. Albertini, and V. Tarantini, Eni S.p.A., Milan, Italy (April 2024) Novel Workflow to Properly Assess the Potential of a Naturally Fractured Gas Reservoir in a Tight Matrix Sandstone, Oman Petroleum & Energy show, Muscat, DOI 10.2118/218572-MS
- N. Colombi, F. Bigoni, R. Colin, F. Bombaci, D. Giamminonni, L. Spaggiari, V. Mattonelli (October 2023) Data Integration for Fracture Model Characterization in a Middle East Carbonate Reservoir, Abu Dhabi, ADIPEC <https://doi.org/10.2118/216765-MS>
- Bigoni F.; Albertini C.; Corrao A.; Leoni G.; Spaggiari L.; Tarantini V. (Feb 2023 MEOS\_GEO) An Integrated Fracture Model and Characterisation Workflow; Manama Bahrein MEOS-GEO Feb 2023

- Albertini C., Bigoni F., Gizzi S., Leoni G., Tarantini V. (June 2022) Fracture Modelling: struggling with different fractured reservoirs and data availability; Naples, AAPG Europe Workshop Carbonates Reservoirs and Sequences: The Challenge continues
- Tarantini V., Albertini C., Tfaili H., Pirondelli M., Bigoni F. (2021, ADIPEC Abu Dhabi) Carbonate Karstified Oil Fields Geological Prediction and Dynamic Simulation Through Equivalent Relative Permeability Curves. SPE207462
- Gabellone, T., Borromeo, O., Consonni, A., Geloni, C., Albertini, C., Bigoni, F., ... Vercellino, A. (2020, January 13). A Multistep Reactive Convection Model for the Prediction of the Dolomite Bodies Distribution in the Karachaganak Field - Kazakhstan. International Petroleum Technology Conference. doi:10.2523/IPTC-20116-
- Cossa, A., Guglielmelli, A., Rotelli, F., Bazzana, M., Callegaro, C., Raimondi Cominesi, N., F. Bigoni, Ibrahim Uatouf, K. S. (2020, January 13). Prediction and Mapping of Karst Features in Mishrif Carbonate Reservoir Through Neural Net Process - Zubair Field. International Petroleum Technology Conference. doi:10.2523/IPTC-20284-
- Bigoni, F., Pirrone, M., Trombin, G., Vinci, F. F., Raimondi Cominesi, N., Guglielmelli, A., ... Viviani, E. (2019, September 17). Middle East Karst Carbonate: An Integrated Workflow For Prediction Of Karst Enhancement Distribution. Society of Petroleum Engineers. doi:10.2118/196619-MS
- C. Albertini, F. Bigoni, V. Tarantini, G. Leoni, F. Contento, A. Vercellino, A. Francesconi; Facing the scale factor from core plugs, to full size core, to coarse grid cells. Mind the gap - Pre-Caspian Basin Carbonate reservoirs petrophysical characterization" EAGE Workshop on Giant Carbonate Field Development - Abu Dhabi Febbraio 2019
- Bigoni, F., Pirrone, M., Pinelli, F., Trombin, G., & Vinci, F. (2019, January 1). A Multi-Scale Path for the Characterization of Heterogeneous Karst Carbonates: How Log-to-Seismic Machine Learning Can Optimize Hydrocarbon Production. Society of Petrophysicists and Well-Log Analysts.
- Albertini, C., Bigoni, F., Francesconi, A., Lazzeri, R., Vercellino, A., Borromeo, O., ... Geloni, C. (2019, September 17). Carbonate Reservoir 3D Model Diagenetic Characterization – Karachaganak Field – Kazakhstan. Society of Petroleum Engineers. doi:10.2118/196673-MS
- F. Bigoni; "Carbonate Reservoir Fields: karst features recognition and modeling" – EUROKARST 2018, Besancon, 2-6 July 2018
- Spagnuolo M., Scalise F., Leoni G., Bigoni F., Contento F.M., Diatto P., Francesconi A., Cominelli A., Osculati L. "Driving Reservoir Modelling Beyond The Limits For A Giant Fractured Carbonate Field - Solving The Puzzle" SPE-192708-MS Abu Dhabi International Petroleum Exhibition & Conference Nov 2018
- F. Bigoni, A. Francesconi, V. Tarantini, R. Marino (Eni S.p.A.) "Faster reservoir simulation allows multi-million cells models: are fine grids requiring fine reservoir geologist?". 79th EAGE Conference and Exhibition 2017, Paris, 12 June 2017
- F. Bigoni, C. Albertini, K. Imagambetov, A. Francesconi, V. Tarantini " Karachaganak Field – Highlights of Eni Reservoir Model"; KMG First International Geological Field trip April 2016, Uralsk/Atyrau/Aktau
- G. Sprega, F. Bigoni, R. Marino and S. Banoori: "Karst Heterogeneities Captured Through Integration of Static & Dynamic Data" Third EAGE Workshop on Iraq, 16 November 2015
- Tarantini, V., Bigoni, F., Imagambetov, K., Tumbarello, G., Marino, R., & Francesconi, A. (2015, November 9). Gas Injection Optimization in a Brown Field: Karachaganak, Republic of Kazakhstan. Society of Petroleum Engineers. doi:10.2118/177598-MS
- C. Albertini, F. Bigoni, A. Cominelli, E. Della Rossa, K. Imagambetov, A. Francesconi, V. Tarantini - eni E&P "Karachaganak, Integrated Reservoir Studies of a Giant Field" SPE 172274 - SPE Annual Caspian Technical Conference and Exhibition 12-14 Novembre 2014
- C. Albertini, M. Bazzana, F. Bigoni, A. Francesconi, M. Pontiggia, V. Tarantini, G. Tumbarello - eni E&P "Different Facies Modeling Techniques to Optimize HM, Late Visean, Karachaganak Field, Kazakhstan" SPE 172316 - SPE Annual Caspian Technical Conference and Exhibition 12-14 Novembre 2014

- F. Bigoni, A. Francesconi, K. Imagambetov, G. Tumbarello, V. Tarantini - eni E&P “Karachaganak - Impact of Complex Internal Geometries on Fluid Flow Paths” SPE 172317 - SPE Annual Caspian Technical Conference and Exhibition 12-14 Novembre 2014
- C. Albertini, L. Bado, F. Bigoni, A. Francesconi, K. Imagambetov, G. Leoni, V. Tarantini (Eni e&p) “Karachaganak brownfield vs Kashagan greenfield: analogues or “apples and oranges”?” – IPTC 17505-MS Doha, Qatar January 2014
- P. Wright, O. Borromeo and F. Bigoni 2013 – “Microbial aragonite in a calcite sea: Carboniferous microbialite Reservoir, Karachaganak Field, Kazakhstan” – 19-20 June 2013 Confernece on Microbial carbonate in space and time, Geological Society, London
- F. Bigoni, E. Della Rossa, A. Francesconi, K. Imagambetov, G. Tumbarello (eni e&p) “A pragmatic way to handle Uncertainty analysis in a Brown Field, Karachaganak Field, Republic of Kazakhstan”- SPE-164810-EUROPEC London 2013
- F. Bigoni, C. Albertini, A. Francesconi , V. Tarantini , G. Tumbarello, F. Villa & F. Ibragimov 2012 -: “Karachaganak Field -Lower Permian Modelling” - EAGE-KazGeo 2012-Almaty
- F. Bigoni, Francesconi, C. Albertini, A. Cominelli, C. Catalani, V. Tarantini, K. Imagambetov, 2012 “Integrated Reservoir Studies - Karachaganak Field- Republic of Kazakhstan”, SPE 154390 EAGE/SPE Conference & Exhibition, 4-7 June 2012 Copenhagen, Denmark
- Albertini, C., Francesconi, A., Bigoni, F., Villa, F., Borromeo, O., Luoni, F., 2011 “Karachaganak Field - Lower Permian Integrated Reservoir Study”, AAPG International Conference, 23-26 October Milan
- Luoni F., Borromeo O., Bigoni F., Camocino D. and Francesconi A., 2010 - “Stratigraphic architecture of the Early Carboniferous reservoir in Karachaganak Field, Pri-Caspian Basin (Kazakhstan)” SPE 139887, Caspian Carbonate Technology Conference, Atyrau, Nov. 8-10 2010
- C. Albertini, F. Bigoni, O. Borromeo, D. Camocino, A. Francesconi, F. Luoni, 2010 - “Karachaganak – 3D Modelling of Dolomite” SPE 139882, Caspian Carbonate Technology Conference, Atyrau, Nov. 8-10 2010
- F. Bigoni, A. Francesconi, C. Albertini, D. Camocino, E. Distaso, O. Borromeo, F. Luoni, 2010 - “Karachaganak - Dynamic data to drive geological model” SPE 139881, Caspian Carbonate Technology Conference, Atyrau, Nov. 8-10 2010
- A. Francesconi, F. Bigoni, P. Balossino, and N. Bona, ENI; F. Marchini, KPDL, M. Cozzi, 2009 - “Reservoir Rock Types Application – Kashagan” SPE 125342-PP, SPE/EAGE Reservoir Characterization and Simulation Conference held in Abu Dhabi, UAE, 19–21 October 2009