Carl Jacquemyn (PhD), geoscientist/modeller

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Relevant skills

Technical
- Specialist in sedimentology, fracturing and diagenesis, evidenced by publications in these fields
- Experienced in characterization using quantitative geology and geostatistical analysis for capturing complex 3D heterogeneities and its uncertainties
- Confident in building and using reservoir models through research projects and teaching Petrel to petroleum MSc class at Imperial College for field development projects
- Effectively compiled fracture database for improved fractured karst-reservoir understanding and modelling
- Strong background in rock mechanics and rock failure from MSc in Geotechnical Engineering
- Successfully integrated sedimentology and faulting interpretations with different datatypes such as petrophysics and geochemistry to unravel formation history

Innovative
- Created novel reservoir modelling method, to overcome grid-limitations and insert complex geometries. This has reached maximum technology readiness level in Saudi Aramco since May 2016
- Successfully developed new 3D geostatistical approach to introduce 3D diagenetic facies distributions into geomodels
- Generated workflow to quantify macroporosity directly from travertine outcrops
- Experienced in constructing and interpreting 3D digital outcrop analogues to extract functional information, using emerging techniques such as photogrammetry
- Improved analysis of 3D digital outcrops and integrate its results with different datatypes such as geochemistry and petrophysics.

Communication
- Successfully delivered presentations to industry partners for research collaborations and reservoir solutions
- Published research findings in relevant peer-reviewed journals. Recent AAPG Bulletin paper is AAPG's most-cited paper published in 2015
- Presented at several international conferences and chaired technical sessions at AAPG-ACE
- Taught on 3 classroom- and 7 field-based courses to students from undergraduate to PhD level
- Collaborated in multidisciplinary teams with reservoir engineers and physics scientists to develop a novel operational modelling to flow simulation approach

Management
- Took lead on several research projects with different industry partners with timely delivery of results
- Supervised 9 MSc students and 2 PhD students in petroleum geoscience and engineering
- Lead as departmental research representative, organising courses, grant calls and collaborations
- Active member of Athena Swan committee in preparation of Silver Award for improving equality in workplace
- Organised and lead fieldwork in rugged areas for groups up to 8 members, including students, staff and external collaborators

Employment

2013 - ...	Imperial College London, UK
	Research Associate – Petroleum geoscience and reservoir modelling
2007 - 2013	KU Leuven, Belgium
	Researcher – Carbonate diagenesis

Qualifications

2009 - 2013	PhD in Geology - KU Leuven, Belgium
	dissertation: *Diagenesis and application of LiDAR in reservoir analogue studies: karstification fractured Cretaceous Apulia Carbonate Platform & dolomitization in Triassic Latemar buildup.*
2002 - 2007	MSc Geotechnical Engineering - KU Leuven, Belgium

Competences

Software	Subsurface modelling:	Schlumberger Petrel, Roxar RMS
	CAD/CAM modelling:	Trelis, Cubit
	Flow simulations:	Schlumberger Eclipse, IC-FERST
	Matlab programming	
	C++ programming	
Languages	Dutch: mother tongue	
	English: native proficiency	
	French: independent proficiency	

Professional development

Fieldtrip safety leader (2015, Exxon-Mobil)

Integrated Reservoir Management (2013, Imperial College London)

Lidar technology applied to structural geology (2014, Université de Lausanne)

Petrel reservoir modelling (2013-2017, Schlumberger)

Geological modelling with IRAP-RMS (2012, Technische Universität Clausthal)

Industry collaborations (with published results)

Sinopec/CUPB – Predicting behaviour of geothermal reservoirs in China

Total - Surface-based reservoir modelling and simulation of deep-water systems

Rapid Reservoir Modelling consortium (IBM/Petrobras/Shell/Statoil/ExxonMobil) - Reducing uncertainty with interactive prototyping of reservoirs

Saudi Aramco – Sedimentology and modelling of Arab-D carbonates

Statoil – Dolomitization and 3D heterogeneity distribution from lidar, remote sensing and geostatistics

ENI - Karstification and fracturing of carbonate rocks in Southern Italy: influence of sedimentology, diagenesis and mechanical stratigraphy

Lundin & IFPEN – Petrophysical variation of reservoir rocks in the Paris Basin

Industry internships

2010 Oct-Dec	Statoil, Bergen	3D carbonate facies interpretation
2010 May-Jun	Statoil, Bergen	Photogrammetry vs. LiDAR comparison
2009 Oct	Statoil, Bergen	Terrestrial LiDAR data processing

Peer-reviewed publications

9. **Jacquemyn, C.**, Jackson, M.D., Hampson, G.H. (2018) *Surface-based geological reservoir modelling using grid-free NURBS curves and surfaces*, **Mathematical Geosciences**, accepted.

8. Onyenanu, G.I., **Jacquemyn, C.**, Graham, G.H., Hampson, G.J., Fitch, P.J.R. and Jackson, M.D. (2018), *Geometry, distribution and fill of erosional scours in a heterolithic, distal lower shoreface sandstone reservoir analogue: Grassy Mb, Blackhawk Fm, Book Cliffs, Utah, USA.* **Sedimentology**, doi: 10.1111/sed.12444

7. **Jacquemyn, C.**, Jackson, M.D., Hampson, G.H., John, C., Zuhlke, R., Cantrell, D.L., AbuBshait, A., Lindsay, R.F. & Monsen, R. (2018) *Geometry, spatial arrangement, and connectivity of carbonate grain-dominated, storm-event deposits in outcrop analogue of Late Jurassic Arab-D reservoir, Saudi Arabia*. **Sedimentology**, doi: 10.1111/sed.12414

6. Zhang, Z., Geiger, S., Rood, M., **Jacquemyn, C.**, Jackson, M.D., Hampson, G.J., Sousa, M. C. (2017). *Flow diagnostics on fully unstructured grids.* **Society of Petroleum Engineers** 182635, doi: 10.2118/182635-MS

5. Jones, R.R., Pearce, M.A., **Jacquemyn, C.**, Watson, F. (2016) *Robust best-fit planes from geospatial data*. **Geosphere**, v. 12, p. 1-7, doi: 10.1130/GES01247.1

4. **Jacquemyn, C.**, Huysmans, M., Casini, G., Hunt, D. & Swennen, R. (2015) *Multi-scale 3D distribution of fracture- and igneous intrusion- controlled hydrothermal dolomite from digital outcrop model (Latemar platform, Dolomites, northern Italy)*. **AAPG Bulletin**, v. 99, p. 957-984, doi: 10.1306/10231414089.

3. **Jacquemyn, C.**, El Desouky, H., Casini, G., Hunt, D. & Swennen, R. (2014). *Dolomitization of the Latemar platform (Dolomites, northern Italy): fluid flow and dolomite evolution*. **Marine and Petroleum Geology**, v. 55, p. 43-67, doi: 10.1016/j.marpetgeo.2014.01.017

2. **Jacquemyn, C.**, Swennen, R. & Ronchi, P. (2012). *Mechanical stratigraphy and (palaeo-) karstification of the Murge area (Apulia, southern Italy).* **Geological Society, London, Special Publications**, v. 370, p. 169-186. doi:10.1144/SP370.4

1. **Jacquemyn, C.**, Swennen, R. & Ronchi, P. (2010). *(Paleo)Karstification in the Apulia region (Southern Italy): influence of sedimentology, diagenesis and mechanical stratigraphy*. Proceedings of the 27th IAS Meeting of Sedimentologists. Alghero, 20-23rd September 2009, p. 141-146.