Gabriel Godefroy

Structural geologist specialized in 3D modelling

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French nationality

Work experience

2018–now (2 years) **Research Geologist**, *Total - Geoscience Research Centre, Aberdeen, United-Kingdom*.
I am carrying out a research project to integrate structural uncertainty into a history matching loop using ensemble-based method.
Supervision of 3 MSc. projects.

2014–2018 (5 weeks) **Teaching assistant**, *Université de Lorraine, France and Freiberg University, Germany*.
I tutored structural modelling, C++ programming and SKUA-GOCAD plugin development. 100 hours including 75 hours in English.
Supervision of 5 MSc. projects.

2014, June–Sept. (3 months) **Researcher (Internship)**, *ENI - Basin Geology department, Milan, Italy*.
I implemented a numerical method to reconstruct eroded paleo-topographies.

2013, July–Aug. (2 months) **Software developer (Internship)**, *Total - Sismage development team, Pau, France*.
I implementated a shape characterization method to compute the orientation of paleo-channels.

2012, July **Trainee at Francepierre-PC**, *Jardres, France*.
I wrote a management plan for quarry wastes and analyzing quarry maps using AutoCAD.

2011, July **Seasonal farm worker**, *Jardres, France*.
I worked in cornfields.

Education

2014–2018 **Ph.D. in Geosciences**, *RING, GeoRessources, Université de Lorraine, France*.
Kinematic and stochastic fault modeling from sparse data for structural uncertainty analysis (link to the pdf)

2013–2014 **Master of Science in Petroleum Geosciences and Reservoir Engineering**, *Université de Lorraine, France. Graduated with honors*.
Development of a numerical method to reconstruct eroded paleo-topography.

2011–2014 **Engineering degree**, *École Nationale Supérieure de Géologie, France*.
Specialized in Numerical Geology (sciences, geological field trips, C++ programming).

Skills

Structural geology

Stochastic modelling Assessing uncertainties arising from fault modelling. Application to a UK gas field.
Developing a numerical methods to account for fault-related uncertainty.

Kinematic modelling Developing a kinematic fault operator relying on a geological parameterization.
Use of numerical optimization to fit the parameterization to real case studies.

Subsurface modelling

Geomodelling Seismic interpretation and structural modelling of faulted domains.

Reservoir Basic knowledge of Eclipse and Intersect flow simulator.

Informatics

Advanced SKUA-GOCAD (structural modelling and plugin development), C++

Intermediate Python, Linux, bash, version control (git), Inkscape, Eclipse and Intersect flow simulators

Basic Javascript, Java, continuous integration (Jenkins)

Languages

English Professional

French Mother tongue

Italian Notions

Spanish Notions

Publications and scientific communications

[1] Gabriel Godefroy. *Modélisation cinématique et stochastique des failles pour la prise en compte des incertitudes structurales*. PhD thesis, Université de Lorraine, 2018.

[2] Gabriel Godefroy, Guillaume Caumon, Mary Ford, Gautier Laurent, and Christopher A-L Jackson. A parametric fault displacement model to introduce kinematic control into modeling faults from sparse data. *Interpretation*, 6(2):1–48, 2017.

[3] Gabriel Godefroy, Guillaume Caumon, Gautier Laurent, and François Bonneau. Structural interpretation of sparse fault data using graph theory and geological rules. *Mathematical Geosciences*, 2019.

[4] Gabriel Godefroy, Guillaume Caumon, Gautier Laurent, and Mary Ford. Seismic interpretation of fault related deformation using a numerical kinematic model. In *SEG Technical Program Expanded Abstracts*. Society of Exploration Geophysicists, oct 2016.

[5] Gabriel Godefroy, Yan Chen, and Alan Irving. Propagating fault-throw uncertainty for probabilistic forecasting using a structurally consistent perturbation method. In *81th EAGE Conference and Exhibition 2019*. EAGE, 2019.

[6] Gabriel Godefroy, Gautier Laurent, Guillaume Caumon, and Bastien Walter. A Parametric Unfault-and-refault Method for Chronological Structural Modeling. In *79th EAGE Conference and Exhibition 2017*. EAGE, 2017.

Miscellaneous

Badminton Regular competitor and member of the Aberdeen Badminton Academy Club.

Photography Member of the Bon Accord Camera Club.

References

Available upon request.