The authors

Jean-Luc MARI

A graduate of the *Institut Physique du Globe Strasbourg* and the IFP School (petroleum geosciences, major in geophysics in 1978), Jean-Luc Mari was employed by IFP *Energies Nouvelles* in 1979 as a research engineer in the Geophysics Department. Here he worked on several research projects, such as high-resolution seismic surveying, reservoir monitoring, and the development of borehole tools, in collaboration with industrial partners GdF-Suez, CGG, Total and ELF Aquitaine. In 1984, he was awarded a PhD in Astronomy and Celestial Mechanics by the Université Pierre et Marie Curie.

In 1986, he was seconded to ELF Aquitaine where he worked on reservoir geophysics. He joined IFPEN in 1987 and was seconded to the Reservoir Department, where he studied, in particular, the benefits of using geophysical methods in horizontal wells. In 1994 he was appointed to the IFP School as a professor and obtained the accreditation to supervise earth science research (HDR). He was an expert in geophysics for IFP *Energies Nouvelles*.

Jean-Luc, member of the EAGE, was an associate editor for *Near Surface Geophysics*. Currently retired from IFP *Energies Nouvelles*, Jean-Luc is an independent researcher and consultant in geophysics. He is a member of the board and of the accreditation committee for the Association for Quality in Applied Geophysics (AGAP *-Association pour la Qualité en Géophysique Appliquée*).

An author and co-author of patents and numerous scientific articles, Jean-Luc Mari has also contributed to educational scientific books and has been involved in the design and development of tutorials and e-books. In 2010, he received a Knighthood from the *Ordre des Palmes Académiques.*

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Geoffroy PAIXACH

Geoffroy is a geophysicist with a degree from the IFP School, Paris. He began his career with an Oil and Gas operator at the Geoscience Research Center in London, focusing on seismic processing amplitude preservation. Over the years, Geoffroy has held various positions in reservoir characterization for Beicip-Franlab, a subsidiary of IFPEN. Geoffroy worked in the Marine CSEM industry and the seismic multi-client industry, developing offshore seismic acquisition programs in multiple countries. He co-founded and managed a startup specializing in real-time simulation for basin modeling in Houston. In 2025, he became the Chief Executive Officer of CFG Geothermal, a geothermal resource consulting and engineering services firm.

Jean-Michel ARS

Graduated from École Normale Supérieure d'Electricité et de Mécanique in 2012 and from Université Paul Sabatier in 2013. Jean-Michel Ars obtained a PhD from Université Bretagne Occidental in 2018 in the field of geophysics, focusing on multi-physics joint inversion applied to geothermal exploration. He was a post-doc for 3 years before becoming a geophysics researcher at Geolinks since 2022. He works primarily in the field of inverse methods for geophysical imaging but also studies seismic ambient noise as subsurface characterization and monitoring tools.

Romain BAILLET

Romain Baillet is a Geophysicist with an Engineer Degree (MSc) from the "École et Observatoire des Sciences de la Terre" school in Strasbourg, France. He joined Beicip-Franlab in 2012 as a specialist in seismic inversion and characterization. Till then, he has been involved in many integrated or specialized studies for all energies, including geothermal activities. As an expert and project leader, he currently participates in the innovation of the methodologies proposed by Beicip-Franlab by designing and carrying out workflows including seismic data, to lower the risks in both prospection and production phases. As

a product manager of the geophysical software InterWell, he improves and optimizes the workflows of seismic inversion, seismic characterization or time-depth conversion. either in terms of technology (e.g. Machine Learning) or customer needs (Performance, data type/transfer…).

Clément BAUJARD

Dr Clément Baujard is an experienced reservoir engineer with a strong background in flow, thermal exchanges and mechanical processes in fractured reservoir. He was graduated as a geoscience engineer in 2002 and obtained a PhD in quantitative hydrogeology in 2005 from Paris School of Mines. From 2006, he worked as a geothermal reservoir engineer in Switzerland and then joined geothermal industry at *Électricité de Strasbourg Géothermie* (ÉSG), a small company offering engineering services in deep geothermal energy in 2013. At ÉS-Géothermie, he is currently leading the subsurface engineering department. He contributed to many European research projects in relation with geothermal energy and he was in charge of several industrial projects in the Upper Rhine Graben dealing with deep geothermal energy and geothermal lithium. He is author or co-author of many international scientific publications

Frédérik BUGAREL

Graduating from Pierre et Marie Curie University (Paris VI) with a master's degree in hydrogeology in 2004, Frédérik Bugarel developed his skills in drilling project engineering by working successively in the international oil industry, in the monitoring and safety of former French mining sites and in geothermal energy. Since 2023, he has held the position of Project Director at CFG Geothermal, a subsidiary of BRGM and BEICIP-FRANLAB, an engineering firm specializing in deep geothermal energy.

Chrystel DEZAYES

Chrystel Dezayes is a researcher at the French Geological Survey (BRGM) in the Geothermal Energy Department. Since her PhD in 1995, she is working about fracture network characterisation at the Soultz-sous-Forêts EGS site and elsewhere in the world. She joined BRGM in 2002 in the geothermal team as researcher. She continues her work about fractured deep geothermal reservoir and develop exploration methods for sedimentary basin context. She is also project leader for high temperature geothermal exploration in oversea islands and scientific coordinator for the geothermal energy and energy storage at BRGM. She has authored and co-authored about 40 articles in scientific journals and numerous others in international conferences.

Frédéric DUBOIS

Graduating from the *École et Observatoire des Sciences de la Terre de Strasbourg* in 2016, Frédéric Dubois is working at the BRGM (*Bureau de recherches géologiques et minières*) since 2020 as geophysicist specialized in electromagnetism. His expertise spans over the broad spectrum from magnetotelluric to intermediate frequency domain and through land and airborne controlled source electromagnetism.

Thomas GAUBERT-BASTIDE

Thomas Gaubert-Bastide, graduated from Université Grenoble Alpes in 2017, obtained a PhD in geophysics from both Université de Pau et des Pays de l'Adour and Université Grenoble Alpes in 2023, focusing on water-table monitoring through seismic interferometry. Since early 2023, he has been working as a geophysicist researcher at Geolinks. His main research is centered on the characterization and monitoring of subsurface physical processes using seismic noise analysis at various scales.

Albert GENTER

Graduating from University of Orléans with a PhD in Geology in 1989, Albert Genter carried out research on the Soultz-sous-Forêts pioneered geothermal project. After his PhD, he was employed by *BRGM*, working on Enhanced Geothermal System (EGS). At *BRGM*, he was successively a junior geologist, R&D project manager, then geo-energy unit manager and finally deputy manager of the geothermal division.

In 2007, he joined the *Heat Mining industrial Group* as the scientific manager of the EGS Soultz site. He was responsible for a geoscientific program for monitoring this geothermal plant producing electricity. From 2014 to now, he joined geothermal industry at *Électricité de Strasbourg Géothermie* (ÉSG) as deputy general manager. He was, for example, the main coordinator of the European Horizon 2020 MEET project from 2018 to 2022. Since 2025, he is retired but still involved in geothermal energy as an independent consultant.

Albert was elected at the board directors of the International Geothermal Association (IGA) from 2013 to 2020. He was also elected at the board of directors of the French Geothermal Association (AFPG) from 2022 to 2024. He is author or co-authors of about 70 international scientific publications. He has also contributed to educational purposes by providing academic lectures in universities (Mainz, Neuchâtel, Paris, Orléans, Strasbourg) and in High Schools (Mines Nancy, École de Géologie de Nancy, IFP School). During his career, he was examiner or supervisor of about 30 students (PhD, master) and 2 accreditations to supervise earth sciences research.

He got two best presentation awards at the geothermal US conference GRC in 2009 and 2014. He got also an award from the WING (Women in Geothermal) association.

Carole GLAAS

Dr Carole Glaas is a junior geologist with an expertise in fractured reservoirs from the Upper Rhine Graben (URG). She was graduated in 2021 with a PhD from French Universities of Strasbourg and Poitiers. She did her PhD in relation with *Électricité de Strasbourg Géothermie* (ÉSG). She focussed on the crystalline part of geothermal wells drilled in fractured reservoirs located in the URG. During her PhD, she investigated hydrothermal alteration minerals like clay minerals as well as the fractured reservoirs from a structural point of view. At ÉSG, she was in charge of geological studies and well log interpretation

for a geothermal well drilled South of Strasbourg and contributed to the well testing operations. Recruited at ÉSG in 2021, as a junior geologist, she contributed to many national and EU research projects dealing with deep geothermal energy and geothermal lithium. She is author or co-author of many international scientific publications

Kaoutar KHAZRAJ

Kaoutar Khazraj graduated with an engineering diploma from the École Nationale Supérieure d'Électricité et de Mécanique in Nancy in 2015, specializing in hydrodynamic reservoir engineering. She also obtained research master's degree in Petroleum Geosciences and Reservoir Engineering from Université de Lorraine in 2015. In 2024, she completed her PhD in geophysics at CY Cergy Paris Université. Her doctoral research focused on developing an innovative hybrid full-waveform inversion method for borehole seismic data to improve inversion results for under-determined seismic problems. Since June 2024, she has been a geophysical researcher at Geolinks, specializing in inverse methods and the development of numerical algorithms for geophysical imaging.

Thomas KREMER

Thomas Kremer received a PhD degree received in 2015 from Institut de Physique du Globe de Paris. He is now a 13-year-old experienced research geophysicist specialized in geophysical monitoring applications with. His research work initiated with the use of electromagnetics methods for the monitoring of CCUS projects. He also developed innovative methods for the monitoring and characterization of hydrogeological systems.

Since 2020, he has been managing the R&D department at Geolinks services, an innovative company that promotes the development of passive seismic methods for multiple subsurface monitoring applications, such as hydrogeological characterization, geotechnical risk assessment, geothermal exploration, and CCUS and UGS projects monitoring.

Éric LASNE

Geologist with a PhD in hydrogeology, Éric Lasne has held project management and management positions at Compagnie Française de Géothermie since 1992. As such, he has extensive knowledge of the challenges of the subsoil in terms of all the applications and uses of geothermal resources. On the technical side, Éric Lasne has worked on several low-energy geothermal projects in France (Dogger in the Paris Basin, Aquitaine Basin, Alsace, Centre Region, etc.) and for electricity generation in the French overseas territories (Guadeloupe, Martinique, La Réunion) and abroad (Azores – Portugal, Dominica, Indonesia, China, Russia, etc.). Involved in the development of CFG's activities, he is also active in professional organizations dedicated to the promotion and development of geothermal energy. A representative of one of the founding members of AFPG, Éric Lasne is also a member of the geothermal energy committee of the French Renewable Energy Union (SER).

Vincent MAURER

Dr Vincent Maurer is a senior geophysicist specialized in seismology with skills in design and installation of seismic networks for monitoring induced micro-seismicity. He was graduated in 2009 with a PhD on geophysics at ETH-Zürich in Switzerland. From 2010 to now, he worked for geothermal industry at *Électricité de Strasbourg Géothermie* (ÉSG) as a geophysicist and is responsible for the seismic monitoring of the Soultz-sous-Forêts and the Rittershoffen geothermal plants. In parallel, he is involved in many geophysical surveys for geothermal exploration in Alsace: 2D/3D seismic acquisition, 3D MT/CSEM survey, aeromagnetic and gravity campaigns, and passive seismology. He also contributed to the interpretation of the geophysical acquisition to design well trajectories. At ÉSG, he is currently involved in several industrial geothermal projects in Northern Alsace. He contributed to national R&D projects and EU research projects dealing with geothermal energy. He is author or co-author of many international scientific publications.

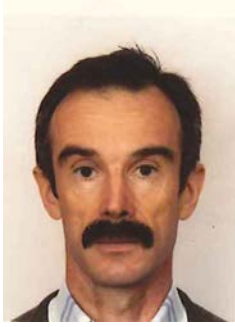
Alberto ROSSELLI

PhD in geophysics from the University of Lausanne, Switzerland. In 2001 he started a postdoc at the Laboratoire de Géophysique of the École Polytechnique de Montréal (Québec). In 2010 Alberto Rosselli was employed by PGS as a seismic navigator. In 2012 he started to work as offshore and onshore client representative for Total EP and ENI. He has been employed as Party Chief by Geo2X. In 2021 he co-founded GEG Experts and he's currently General Director of the company.

Alexandre STOPIN

Alexandre Stopin is an experienced geophysicist currently working at BRGM (Bureau de Recherches Géologiques et Minières). His expertise spans geophysical exploration, geothermal resource assessment, and geological CO_2 storage. He has contributed to several European projects and is responsible for the geophysical acquisition and processing of the Geoscan project. Earlier in his career, he worked at Shell Global Solutions International BV, where he led a team specialized in advanced seismic methods, including Elastic Full Waveform Inversion (FWI), to tackle complex subsurface imaging challenges. Beyond his research contributions, Alexandre actively shares his findings through scientific publications and international conferences, promoting sustainable energy solutions and innovative geophysical techniques.

Hervé TRAINEAU



Hervé Traineau is a senior geologist and geothermal expert. He got a PhD in Petrology-Volcanology at the University of Paris 11 in 1982. He began his career in 1981 as a geologist at the BRGM. Assigned to the Geothermal Department, he participated in numerous geothermal exploration campaigns in the West Indies (Haiti, Santo Domingo, Martinique, Guadeloupe, Dominica). From 1983 to 1997, he was assigned to the Institut Mixte de Recherches Géothermiques and then to the BRGM Research Department, where he participated in various applied research programs and exploration

campaigns in the fields of high-enthalpy geothermal energy. He also participated in the European geothermal research program “Roches Chaudes Sèches” in Soultz-Sous-Forêts (Alsace).

In 1998, Hervé Traineau joined CFG (Compagnie Française de Géothermie) where he was particularly involved in development projects for power generation in the volcanic islands of the Caribbean (Guadeloupe, Martinique, Dominica). Between 2000 and 2015, he actively participated in the development of the field and then in the O&M activities of the Bouillante geothermal power plant (belonging to Géothermie Bouillante). At the same time, he carried out expertise and due diligences on various high-temperature geothermal fields in the Caribbean and around the world (Chile, Indonesia, Italy, Nevada...). Between 2017 and 2020, he worked as a well site geologist during the drilling of two deep geothermal wells (>5 km) in the Rhine Graben.

Catherine TRUFFERT

Holding a PhD in Geophysics issued by Marie Curie University France, she worked for more than twenty years in the French Geological Survey, BRGM. Catherine has served IRIS Instruments as the CEO since March 2017, managing day-to-day operations and working in research and innovation with electrical engineers and geophysicists. In 2024, Catherine received the insignia of Chevalier de la Légion d’Honneur.

Christophe VOISIN

Graduating for the École Normale Supérieure de Lyon in 1996, Christophe Voisin received a Ph.D. in the fields of geophysics and applied mathematics focused on earthquake physics at Université Grenoble Alpes in 2000. He has been a CNRS researcher since 2002 located at the Institut des Sciences de la Terre (ISTerre). Among different topics, he developed the field of environmental seismology (using ambient seismic noise). In 2018, he developed a new patented approach to seismic noise correlations aiming at capturing the intrinsic attenuation linked to the presence of fluids. Christophe Voisin has been the scientific advisor for Geolinks since 2021.