Curriculum Vitae

Personal information

Name/Surname	**Gianluca Fiandaca**
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Nationality	Italian
Date of birth	17 February 1978
Gender	Male
Author Identifications	ORCID: 0000-0002-3395-878X Researcher ID: I-2980-2012 Scopus ID: 23667017400 Google Scholar: https://scholar.google.it/citations?user=8GOEg60AAAAJ&hl=en

Work experience

Dates	**01 October 2016 – to date**
Occupation or position held	**Associate Professor**
Main activities and responsibilities	Management of data acquisition, processing and inversion of Induced polarization data in all the group projects. Processing/instrumental development for increasing the acquisition range of time-domain IP data. Co-development and maintenance of the AarhusInv inversion code, in particular for 3D inversion of electric and electromagnetic data. Project management. Tutoring of PhD, master and bachelor students. Teaching.
Teaching	2018 – E&EM Course, Primary teacher, course responsible – Aarhus University, Department of Geoscience. 2018 – Geoelectromagnetics and Geomodeling, teacher of the electromagnetic part of the couse – Aarhus University, Department of Geoscience.
Name and address of employer	Aarhus University, Department of Geoscience, C. F. Møllers Alle 4, 8000 Aarhus C, Denmark.

Dates	**01 September 2015 – 31 September 2016**
Occupation or position held	**Assistant Professor**
Main activities and responsibilities	Management of data acquisition, processing and inversion of Induced polarization data in all the group projects. Processing/instrumental development for increasing the acquisition range of time-domain IP data. Co-development of the AarhusInv inversion code, in particular for 3D inversion of electric and electromagnetic data. Tutoring of PhD, master and bachelor students. Teaching.
Teaching	2016 – E&EM Course, Primary teacher – Aarhus University, Department of Geoscience.
Name and address of employer	Aarhus University, Department of Geoscience, C. F. Møllers Alle 4, 8000 Aarhus C, Denmark.

Dates	**01 September 2012 – 31 August 2015**
Occupation or position held	**Assistant Professor**
Main activities and responsibilities	Development of new inversion codes for DC/IP (Direct Current/Induced Polarization) NMR (Nuclear Magnetic Resonance) and EM methods. Development of processing algorithms for DC/IP data. Interpretation of DC/IP field surveys. Co-tutoring of Phd and bachelor students. Teaching.

Teaching	2015 – E&EM Course, Primary teacher – Aarhus University, Department of Geoscience. 2014 –Inversion of Induced Polarization Data, Primary teacher – Teknisk Geologi, Lunds Tekniska Högskola, Lunds Universitet. 2014 – E&EM Course, Direct Current and Induced Polarization methods – Aarhus University, Department of Geoscience. 2013 – E&EM Course, Direct Current and Induced Polarization methods – Aarhus University, Department of Geoscience.
Name and address of employer	Aarhus University, Department of Geoscience, C. F. Møllers Alle 4, 8000 Aarhus C, Denmark.
Dates	**01 September 2010 – 31 August 2012**
Occupation or position held	**Postdoctoral Researcher (*Assegnista di Ricerca*) in Applied Geophysics**
Main activities and responsibilities	Development of new inversion codes for DC/IP (Direct Current/Induced Polarization) and NMR (Nuclear Magnetic Resonance) methods. Planning/execution of field surveys for landfill characterization.
Teaching	2010 – Fortran 95 course, 6 double lectures in scientific programming (primary teacher) – Aarhus University, Department of Geoscience.
Name and address of employer	University of Palermo, Department of Mathematics and Informatics, via Archirafi 34, Palermo, Italy.
Period Abroad	Visiting Researcher at Aarhus University, HydroGeophysics Group, Department of Geoscience since June 2010
Dates	**01 August 2008 – 31 July 2010**
Occupation or position held	**Postdoctoral Researcher (*Assegnista di Ricerca*) in Applied Geophysics**
Main activities and responsibilities	Development of new techniques to decrease invasivity and acquisition time of 3D ERT (Electrical Resistivity Tomography). Planning and coordination of 3D ERT surveys. Development of software (in fortran language) for data processing and denoising. Development of ERT and IP instruments, in collaboration with the Department of Electronic Engineering of the University of Palermo.
Teaching	2010 – Hydrogeophysical field course (co-teaching) – Aarhus University, Department of Geoscience.
Name and address of employer	University of Palermo, Department of Chemistry and Physics of the Earth and Applications to Geo-Resources and Natural Risks, Geophysical Section, via Archirafi 26, Palermo, Italy.
Period Abroad	Visiting Researcher at Aarhus University, HydroGeophysics Group, Department of Geoscience on March and April 2010.
Dates	**01 August 2007 – 31 July 2008**
Occupation or position held	**Postdoctoral Researcher (*Assegnista di Ricerca*) in Applied Geophysics**
Main activities and responsibilities	Study of lapideous, metallic and wooden works of Art by means of geophysical techniques, in order to develop an investigation protocol for decay recognition and risk mitigation.
Name and address of employer	University of Palermo, Department of Chemistry and Physics of the Earth and Applications to Geo-Resources and Natural Risks, Geophysical Section, via Archirafi 26, Palermo, Italy (in collaboration with the Regional Restoration Center of Palermo (*Centro Regionale per la Progettazione ed il Restauro*), Via Cristoforo Colombo 52, Palermo, Italy).
Dates	**27 March 2007 – July 2009**
Occupation or position held	**R&D**
Main activities and responsibilities	Development of geophysical instruments for detecting the "sonic imprint" of artworks and for 3D geoelectrical surveys.
Name and address of employer	Diasis S.r.l. (Spinoff of the University of Palermo), c/o Incubatore d'Impresa Arca, Viale delle Scienze, Edificio 16, Palermo, Italia.
Dates	**01 May 2007 – 31 January 2008**
Occupation or position held	**Fortran Programmer**
Main activities and responsibilities	Development of a Graphical User Interface (GUI), using Fortran 95 programming language, to be included in a CFD flow modelling software.
Name and address of employer	CoNISMa, via Isonzo 32, Roma, Italy.

Education and training	
Dates	**January 2004 – February 2007**
Title of qualification awarded	**PhD in Applied Geophysics**
Principal subjects/occupational skills covered	Thesis Title: "New 2D and 3D arrays for Electrical Resistivity Tomography". Planning and execution of 2D and 3D surveys, especially in archaeological and environmental researches; development of new 2D and 3D ERT arrays; integrated GPR, seismic (refraction), magnetic ad geoelectrical surveys. Ultrasonic tomography.
Name and type of organisation providing education and training	University of Palermo, Department of Chemistry and Physics of the Earth and Applications to Geo-Resources and Natural Risks, Geophysical Section, via Archirafi 26, Palermo, Italy.
Level in international classification	**ISCED 6**
Dates	**November 1996 – February 2003**
Title of qualification awarded	**Diploma di Laurea (equivalent to a Master Degree) in Physics**
Principal subjects/occupational skills covered	Thesis Title: "Proteins embedded in silica nanoparticles". Development of a new technique for protein encapsulation in silica nanoparticles. Spectroscopy, Circular Dicroism, Dynamic and Static Light Scattering. Experience in sample preparation in chemical laboratory.
Name and type of organisation providing education and training	University of Palermo, via Archirafi 36, Palermo, Italy.
Level in international classification	**ISCED 5**

Qualifications	
Dates	April 2018
Title of qualification awarded	**Qualified as "Professore Seconda Fascia" in the Italian "Abilitazione Scientifica Nazionale", sector A4/04**
Dates	May 2013
Title of qualification awarded	**Qualified as Senior Research Scientist in the field of Geophysics at the Geological Survey of Denmark and Greenland**
Dates	March 2013
	Qualified as technologist of 3rd level for supporting the processes of management, coordination and development of research initiatives at the Italian Research Council (CNR)
Dates	May 2012
Title of qualification awarded	**Qualified for Associate Professor in Hydrogeophysics at Aarhus University**

Awards for scientific activity	
2012	**"Time domain induced polarization: 2D inversion for spectral information", AGLC award as best work on Applied Geophysics at the 2012 conference of the Italian group of geophysics of the solid earth (GNGTS2012)**
2009	**"The MYG methodology to carry out 3D Electrical Resistivity Tomography on media covered by vulnerable surfaces of artistic value", best work on Physics for the Cultural Heritage at the 2009 conference of the Italian Society of Physics (SIF2009)**
2007	**"The Sonic Imprint", best idea of business StartCup 2007 of the University of Palermo**

Research projects	
Dates	**2018 –2021**
Project name	**GIREM**
Project description	Real-time 3D cross-hole DCIP mapping of injected chemical agents for pollution remediation.
Partners	Aarhus University, Ejlskov A/S, SkyTem Surveys A/S
Budget	6 million, DKK (Aarhus University)
Funding agency	Innovation Fund Denmark, Grand Solutions
Role	Co-applicant. Workpackage Leader in instrument development and partner in the processing/inversion workpackage.
Dates	**2017 –2019**
Project name	**Kærgård Plantation**
Project description	Mapping of the distribution of the oxidizing agent through 3D cross-borehole DCIP for in-situ remediation of pollution
Partners	Region of Southern Denmark, Aarhus university
Budget	0.8 million, DKK (Aarhus University)
Funding agency	Region of Southern Denmark
Role	Supervising of data processing and inversion. Master student supervision.
Dates	**2017 –2020**
Project name	**SmartExploration**
Project description	Development of seismic, electromagnetic and potential filed methods.
Partners	Sweden (Uppsala University, Geological Sur-vey of Sweden, Nordic Iron Ore, Ludvika Kommun, GeoVista, MIC Nordic, BitSim, and Amkvo); Finland (Yara, University of Helsinki and University of Turku); Denmark (SkyTEM Surveys and Aarhus University); Netherlands (Delft University of Technology, Seismic Mechatronics and EAGE); Italy (Polytechnic University of Turin); Portugal (Somincor and National Laboratory of Energy and Geology); Ger-many (Technical University Bergakademie Freiberg);Poland (Institute of Geophysics, Polish Academy of Sciences, Geopartner and Proxis); Greece (National Technical University of Athens, Helas Gold, Seismotech and Delfi Distomon).
Budget	5 millions, EUR (All partners)
Funding agency	Horizon 2020
Role	Co-development of 3D inversion software for 3D ATEM data
Dates	**2016 –2018**
Project name	**MAGIC**
Project description	Mapping geology in cities, creating a combined setup of instrument and software that will create an integrated, semi-automated data framework
Partners	I-GIS A/S, Lund University, Guideline Geo AB, Aarhus University
Budget	0.8 million, DKK (Aarhus University)
Funding agency	Jointly funded by the European Union, Eurostars Programme, Central Region Denmark, Innovation Fund Denmark and The Swedish innovation agency Vinnova under the project "Mapping Geology in Cities" (E10096 MAGIC)
Role	Co-applicant. Development of processing and inversion software for DCIP data for non-expert users.
Dates	**2017 –2020**
Project name	**MIRACHL**
Project description	Characterization and monitoring of in situ remediation of chlorinated hydrocarbon contamination using an interdisciplinary approach.

Partners	Lund University, Stockholm University, Aarhus University, Tyrens AB
Budget	0.8 million, DKK (Aarhus University)
Funding agency	Formas, Sweden
Role	Co-applicant. PhD supervisor for the development of a 3D DCIP inversion software.
Dates	**2015 –2016**
Project name	**Mapping sand lenses**
Project description	The goal of this project is to test and evaluate the potential of the direct current (DC) and induced polarization (IP) methods to map sand lenses of different sizes in moraine till.
Partners	Capital Region of Denmark, Orbicon, Aarhus university, Copenhagen university
Budget	0.5 million, DKK (Aarhus University)
Funding agency	Capital Region of Denmark
Role	Survey design and management of data processing and inversion
Dates	**2015 –2016**
Project name	**Leachate monitoring**
Project description	The goal of this project is to test and evaluate a method for monitoring of leachate into groundwater using a permanently installed DC and induced polarization (DCIP) electrode array
Partners	Central region of Denmark, Aarhus University
Budget	0.9 million, DKK (All partners)
Funding agency	Central region of Denmark
Role	Co-applicant. Survey design and management of data processing and inversion
Dates	**2015 – 2016**
Project name	**Joint Inversion TEM and GCM data**
Project description	The goal is to develop tools for a combined interpretation of SkyTEM data and GCM data using a voxel grid to improve the earth model in the top 30 meters.
Partners	Aarhus university, The Nature Agency, Rambøll
Budget	1.7 million, DKK (All partners)
Funding agency	The nature Agency
Role	Co-applicant. Algorithm development and design
Dates	**2014 –s2018**
Project name	**GEOCON**
Project description	Advancing GEOlogical, geophysical and CONtaminant monitoring technologies for contaminated site investigation
Partners	DTU (Denmark); Aarhus University (Denmark); GEUS (Denmark); Lund University (Sweden); Bonn University (Germany); Kansas University (USA); Orbicon (Denmark); Region of Souther Denmark; Central Region Denmark.
Budget	6.5 millions, DKK (Aarhus University, granted)
Funding agency	The Danish Council for Strategic Research under the Programme commission on sustainable energy and environment.
Role	Co-applicant. Senior geophysicist, design of field experiments, responsible of DCIP data processing and inversion. Supervision of master and PhD students
Dates	**2014 –2015**
Project name	**Ghana**
Project description	Mapping landfills and pollution plumes in developing countries through geophysical prospection
Partners	Aarhus University (Denmark), KNUST University (Ghana)

Budget	0.15 million, DKK (Aarhus University, granted)
Funding agency	Danida
Role	Design of field experiments, responsible of DCIP data processing and inversion. Supervision of PhD student
Dates	**2013 – 2018**
Project name	**TRUST**
Project description	Geoelectric mapping investigation method for underground utilities in an urban environment.
Partners	Lund University (Sweden); Aarhus University (Denmark); Tyréns (Sweden)
Budget	1.9 million, SEK (Aarhus University)
Funding agency	Formas - The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning, (ref. 2012-1931), BeFo - Swedish Rock Engineering Research Foundation, (ref. 331) and SBUF - The Development Fund of the Swedish Construction Industry, (ref. 12719)
Role	Co-applicant. Management of the developments in induced-polarization data processing. PhD student tutoring.
Dates	**2013 –2014**
Project name	**Monitoring of active processes in permafrost**
Project description	Development and installation of a DC-IP equipment with subsequent data collection for monitoring the freeze-thaw processes in an area of Disko, Greenland
Partners	Copenhagen University (CENPERM project), Aarhus University, DTU
Budget	0.17 million, DKK (Aarhus University)
Funding agency	CENPERM
Role	Development of the time-lapse inversion scheme for DCIP data.
Dates	**2012 –2016**
Project name	**HyGEM**
Project description	Integrating geophysics, geology, and hydrology for improved groundwater and environmental management. http://hgg.au.dk/projects/hygem.
Partners	Aarhus University (Denmark); Geological Survey of Denmark and Greenland (Denmark); Technical University of Denmark (Denmark); The Commonwealth Scientific and Industrial Research Organization (Australia); Geological Survey of Netherands (Netherlands); United States Geological Survey (USA)
Budget	6.9 millions, DKK (Aarhus University, granted)
Funding agency	Strategic research Council of Denmark
Role	Co-applicant. Development of design of the Voxel inversion of AEM data.
Dates	**2010 –2014**
Project name	**CO2-GS**
Project description	Environmental Technology for Carbon Dioxide Sequestration in Aquifers. http://co2gs.geus.net
Partners	University of Copenhagen (Denmark); Geological Survey of Denmark and Greenland (Denmark); Technical University of Denmark (Denmark); Aarhus University (Denmark); Lawrence Berkeley National Laboratory (USA); Heriot-Watt University (UK)
Budget	4.1 millions, DKK (Aarhus University, granted)
Funding agency	Strategic research Council of Denmark
Role	Participant
Dates	**2008 – 2012**
Project name	**RiskPoint**
Project description	Risk assessment for identifying and prioritising the clean up and management of point sources of contamination to groundwater and surface water resources. www.risk-point.dk

Partners	Technical Universityof Denmark (Denmark); Aarhus University (Denmark); DHI Water Health Environment (Denmark); VITO NV (Belgium); University of Idaho (USA); Helmholtz Centre for Env. Res. (Germany); Geological Survey of Austria (Austria); Birmingham University (UK); TU Berlin (Germany)
Budget	24.1 millions, DKK (All partners); DKK 5.9 millions (Aarhus University)
Funding agency	The Strategic Research Council of Denmark
Role	Participant
Dates	**2008 –2011**
Project name	**CLIWAT**
Project description	Adaptive and sustainable water management and protection of society and nature in an extreme climate. www.cliwat.eu
Partners	LIAG (Germany); Geological Survey of Denmark and Greenland (Denmark); Geological Survey of the Netherlands (Netherlands); Deltares (Netherlands); Aarhus University (Denmark); Ghent University (Belgium).
Budget	0.76 million, EUR (Aarhus university)
Funding agency	Interreg IV EU project
Role	Participant
Dates	**2006 –2008**
Project name	**FIRB 2005**
Project description	Reconstruction and enhancement of the archaeological landscape in the Mediterranean coastal environment through innovative non-invasive technologies.
Partners	Università di Cagliari; Università di Palermo; Politecnico di Torino; Con.I.S.Ma.
Budget	0.65 million, EUR (All partners)
Funding agency	MIUR (Italian Ministry of Education)
Role	Participant

Reviewing and editorial experience

Reviewer	Geophysical Journal International, Geophysics, Water Resources Research, Near Surface Geophysics, Journal of Applied Geophysics, Journal of Environmental & Engineering Geophysics, Vadose Zone Journal, Exploration Geophysics, Hydrogeology Journal.
Guest editor	Near Surface Geophysics, December 2017, special issue of the 4th IP Workshop

Scientific and organizing committees

Event	5th IP Workshop, Rutgers University, Newark (USA), October 3-5 2018
Role	Member of scientific committee of the event
Event	4th IP Workshop, Aarhus University (Denmark), June 6-8 2016
Role	Member of both the organizing and scientific committee of the event
Event	26th Symposium on the Application of Geophysics to Engineering and Environmental Problems 2013 (SAGEEP 2013), 17-21 March 2013, Denver, Colorado, USA.
Role	Chairmen of the session "Time Domain and Frequency Domain Spectral Induced Polarization: Advances and Applications"

Invited keynote speeches	
Event	AEM2018/7th International Workshop on Airborne Electromagnetics, Kolding (Denmark), June 17-20 2018
Title	Robust inversion of induced polarization effects in airborne transient electromagnetic

Research metrics			
Articles in peer reviewed journalsr *In press, DOI assigned **Under review	**39+5*+3****		
International patents	**2**		
Articles/Extended abstracts in books and proceedings of international conferences	**70**		
Other publications	**76**		
Presentations at international conferences	**30**		
h index	ISI WoS: **12**	Scopus: **15**	Google Scholar: **17**
Citations	ISI WoS:**423**	Scopus:**629**	Google Scholar: **913**

Personal skills and competences	
Mother tongue(s)	**Italian**

Other language(s)	**Understanding**				**Speaking**				**Writing**	
Self-assessment	Listening		Reading		Spoken interaction		Spoken production			
European level (*)										
English	C1	Proficient User	C1	Proficient User	C1	Proficient User	C1	Proficient User	C1	Proficient User

Social skills and competences	Team work capability, developed working in various research groups, both in national and international projects and in multidisciplinary researches.
Technical skills and competences	Experience in various geophysical techniques: ERT, IP, NMR, EM, Seismic, Georadar, Magnetism.
Computer skills and competences	Programming: Fortran; Matlab; C++ (elements).

Aarhus, 30.07.2018

Gianluca Fiandaca, Associate Professor