Sara Ciattoni

EDUCATION AND TRAINING

01/11/2021 – 31/10/2024 Urbino, Italy
PHD University of Urbino

Structural Geological Modeling: Developed geological models using surface data and seismic interpretations to study the evolution of basins and tectonic structures.

Seismic and Gravimetric Data Interpretation: Experienced in analyzing seismic data and creating gravimetric models to delineate subduction geometry and lithospheric structure.

Geothermal Modeling: Created geothermal models to analyze the thermal structure of the upper plate in subduction zones.

Geological Research and Analysis: Skilled in conducting advanced scientific research in the fields of subduction, tectonics, and sedimentary basins.

Field-Based Structural Geological Surveying: Hands-on experience in structural geological surveys during field campaigns in regions such as the Peruvian Andes and Panoche Hills in California.

International Collaboration: Proven ability to work in international teams, demonstrated by collaboration with the University of Aberdeen and participation in overseas research projects.

Geological Modeling Software Proficiency: Proficient in using specialized software for geological, gravimetric, and geothermal modeling and interpretation.

Research Project Management: Skilled in managing and developing complex research projects, from fieldwork to data modeling and geological analysis.

Field of study Earth sciences , Natural sciences, mathematics and statistics not elsewhere classified | **Level in EQF** EQF level 8 |

Thesis Cordilleran-type mountain building and subduction geometry: insights from the Andean orogenic segment

21/10/2019 – 22/10/2021 Camerino, Italy
MASTER'S DEGREE University of Camerino

Geomechanical Characterization: Experience in evaluating rock mass strength and quality using tools like the Schmidt hammer and Equotip and scanlines.

Rock Mass Quality Assessment: Knowledge of rock mass parameters (GSI, RQD, wJd, Jv) and their correlation with fracturing.

Field Sampling and Data Analysis: Skills in geological sampling and statistical analysis using MATLAB and visual tools (scatterplots, boxplots).

Field of study Earth sciences | **Final grade** 108 | **Level in EQF** EQF level 7 |

Thesis Regional geomechanical characterization of subsurface rock masses: a case study of the Sibillini mountains area

18/07/2014 – 14/12/2018 Camerino, Italy
BACHELOR'S DEGREE University of Camerino

Geothermal Plant Monitoring: Experience in monitoring and analyzing advanced geothermal systems.

Data Management and Analysis: Skills in handling large datasets and using sensors for real-time monitoring.

Thermal and Fluid Dynamics Analysis: Ability to analyze thermal exchange and fluid dynamics between fluid and soil.

Geothermal Expertise: Knowledge of low-enthalpy geothermal systems and their applications.

Excel Proficiency: Skilled in organizing and analyzing data using Excel.

Multidisciplinary Collaboration: Experience working on multidisciplinary projects like the MATREND project.

Field of study Earth sciences | **Final grade** 107 | **Level in EQF** EQF level 6 |

Thesis Monitoraggio e analisi di alcuni parametri di funzionamento di un impianto geotermico pilota a bassa entalpia (progetto MATREND)

COURSES

19/02/2024 – 14/06/2024

B016078 - Geodinamica (Università di Firenze)

The course aimed to deepen knowledge about the internal dynamics of the Earth through a review of the main deformational contexts and the mechanisms that govern them. The topics covered were: Basics of plate tectonics; forces, stress, and deformation; elasticity and elastic deformation of the lithosphere; heat conduction and production; thermal processes in the lithosphere; introduction to Python; finite element method (FEM) for solving geodynamic problems; isostasy and flexure; subduction; elastic and viscous deformation.

RESEARCH PERIODS ABROAD

17/04/2022 – 20/07/2022

Research period at University of Aberdeen

Research period at University of Aberdeen under the supervision of Professor Robert Butler. During this period I worked on structual geological modelling.

FIELD ACTIVITY

07/10/2022 – 02/11/2022

Structural-geological survey in California (US) 2022

Geological field research activities in Pannoche Hills (California) with the Sand Injection Research Group (SIRG) from University of Aberdeen

04/09/2022 – 17/09/2022

Structural-geological survey in Peru 2022

Write here the description...Structural geological survey in the area of the Pisco East basin (Perù) with the reseach groups from the University of Camerino, University of Pisa and University of Milano Bicocca, in cooperation with the Departamento de Paleontología de Vertebrados del Museo de Historia Natural - Universidad Nacional Mayor de San Marcos of Lima.

29/08/2021 – 12/09/2021

Structural-geological survey in Peru 2021

Structural geological survey in the area of the Pisco East basin (Perù) with the reseach groups from the University of Camerino, University of Pisa and University of Milano Bicocca, in cooperation with the Departamento de Paleontología de Vertebrados del Museo de Historia Natural - Universidad Nacional Mayor de San Marcos of Lima.

PUBLICATIONS

2025

Lithosphere architecture along the axis of the subducting aseismic Nazca Ridge (Peruvian active Margin)

Ciattoni, S., Cella, F., Mazzoli, S., Zambrano, M., Megna, A., Santini, S., Butler R., Pierantoni P.P., & Di Celma, C. (2025). Lithosphere architecture along the axis of the subducting aseismic Nazca Ridge (Peruvian active margin). *Tectonics*, *44*(1), e2024TC008514.

Ciattoni, S. Cella, F., Mazzoli S., Zambrano M., Megna A., Santini S., Butler R., Pierantoni P. P., & Di Celma C.

2024

Controls of lithology and degree of fracturing on the in-situ estimation of rock mass hardness using the Equotip hardness tester

Mammoliti, E., Ciattoni, S., Francioni, M., Baiocchi, G., Gironelli, V., & Mazzoli, S. (2024). Controls of lithology and degree of fracturing on the in-situ estimation of rock mass hardness using the Equotip hardness tester. *Bulletin of Engineering Geology and the Environment*, *83*(11), 470.

Mammoliti E., Ciattoni S., Francioni M., Baiocchi G., Gironelli V., & Mazzoli S.

2024

Seismotectonic setting of the Andes along the Nazca Ridge subduction transect: new insights from thermal and finite element modelling

Ciattoni, S., Mazzoli, S., Megna, A., & Santini, S. (2024). Seismotectonic Setting of the Andes along the Nazca Ridge Subduction Transect: New Insights from Thermal and Finite Element Modelling. Geosciences, 14(10), 257.

Ciattoni, S., Mazzoli, S., Megna, A., & Santini, S. (2024) Geosciences, 14(10), 257.

2023

Two-Dimensional Geothermal Model of the Peruvian Andes above the Nazca Ridge Subduction

Ciattoni, S., Mazzoli, S., Megna, A., Basilici, M., & Santini, S. (2023). Two-Dimensional Geothermal Model of the Peruvian Andes above the Nazca Ridge Subduction. *Energies*, *16*(23), 7697.

Ciattoni, S., Mazzoli, S., Megna, A., Basilici, M., & Santini, S. (2023). Energies, 16(23), 7697.

2022

Towards deciphering the Cenozoic evolution of the East Pisco Basin (southern Peru)

Di Celma, C., Pierantoni, P. P., Volatili, T., Molli, G., Mazzoli, S., Sarti, G., Ciattoni S., Bosio G., Malinverno E., Collareta A., Gariboldi K., Gioncada A., Jablonska D., Landini W., Urbina M. & Bianucci, G. (2022). Towards deciphering the Cenozoic evolution of the East Pisco Basin (southern Peru). *Journal of Maps*, *18*(2), 397-412.

CONFERENCES AND SEMINARS

03/09/2024 – 05/09/2024 Bari (Italy)

Congresso congiunto SGI-SIMP 2024 - Geology for a sustainable management of our Planet.

Convener of the session: S48. Multidisciplinary Approaches to 3D Geological Modelling: Uncertainty mitigation for basin analysis and geological applications

14/04/2024 – 19/04/2024 Vienna

EGU General Assembly 2024

Contribution entitled: "Comprehensive two-dimensional structural-geological model of the Nazca Ridge subduction zone"

Link https://doi.org/10.5194/egusphere-egu23-4323

19/09/2023 – 21/09/2023 Potenza (Italy)

Congresso congiunto SIMP, SGI, SOGEI, AIV 2023 - The Geoscience paradigm: Resources, Risks and future perspectives

Contribution entitled: "Microstructural and geochemical analyses on fibrous gypsum veins in a forearc environment: a study case of Pisco Basin (Peru) and San Joaquin Valley (California)."

Link https://dx.doi.org/https://doi.org/10.3301/ABSGI.2023.02

23/04/2023 – 28/04/2023 Vienna

EGU General Assembly 2023

Contribution entitled: "2D Geothermal model across the Peru-Chile trench and the Andean Cordillera above the Nazca Ridge subduction"

Link https://doi.org/10.5194/egusphere-egu23-4323

19/09/2022 – 21/09/2022 Torino (Italy)

Congresso congiunto SGI-SIMP 2022 - Geosciences for a sustainable future

Contribution entitled: "Syn-tectonic gypsum veins in the Eocene-Miocene eastern Pisco forearc basin, Peru margin"

Link https://dx.doi.org/10.3301/ABSGI.2022.02

WORK EXPERIENCE

01/03/2018 – 31/08/2018 Macerata, Italy

GEOLOGY TECHNICIAN GEOTERMIA MARCHE S.N.C

Preliminary study activities and data processing related to the installation of geothermal plants in the area; geophysical investigations for soil property characterization (MASW and HVSR).

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Geographical Informational Systems (GIS) | Python Language - Basic knowledge | MOVE - Petroleum Experts | Schlumberger Petrel | Stereonet | Fault-Kin | Microsoft Office | Adobe Photoshop, illustrator, AI | Google Drive | MatLab (basic)