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## Valentina Romano

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Gender: Female Date of birth: 11/07/1987 Nationality: Italian

### WORK EXPERIENCE

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[ 16/06/2022 – 15/06/2023 ] **Post doc - Principal Investigator Fellowship BE FOR ERC 2021**

*Dept. of Earth Sciences-Sapienza University of Rome*

**City:** Rome

**Country:** Italy

**Main activities and responsibilities:**

Coupling cOntinuum and DIcrete approaches in FRacture Modeling (CODIFRAM)

[ 01/08/2020 – 15/06/2022 ] **Post doc**

*Dept. of Earth Sciences-Sapienza University of Rome*

**City:** Rome

**Country:** Italy

**Main activities and responsibilities:**

Studio sulla ricostruzione di sistemi di fratture ai fini della valutazione della capacità di stoccaggio geologico di CO<sub>2</sub> e idrogeno

[ 01/04/2019 – 31/03/2020 ] **Post doc**

*Dept. of Earth Sciences-Sapienza University of Rome*

**City:** Rome

**Country:** Italy

**Main activities and responsibilities:**

Coupled fluid migration and crustal deformation modeling: application to Mammoth Mountain, Long Valley Caldera

[ 22/02/2018 – 11/01/2019 ] **Post Doctoral Research Associate**

*Dept. of Geology-University of Illinois at Urbana Champaign*

**City:** Urbana (Illinois)

**Country:** United States

**Main activities and responsibilities:**

Modeling three-dimensional mantle melt generation, migration, and extraction at Mid-Ocean Ridges

[ 01/11/2017 – 21/02/2018 ] **Visiting Scholar**

*Dept. of Geology-University of Illinois at Urbana Champaign*

**City:** Urbana (Illinois)

**Country:** United States

**Main activities and responsibilities:**

Modeling three-dimensional mantle melt generation, migration, and extraction at Mid-Ocean Ridges.

[ 01/01/2016 – 31/10/2017 ] **Visiting Scholar**

*Dept. of Geology-University of Illinois at Urbana Champaign*

**City:** Urbana

**Country:** United States

**Main activities and responsibilities:**

Modeling three-dimensional mantle melt generation, migration, and extraction at Mid-Ocean Ridges and geophysics data analysis for the OASIS Project.

[ 06/08/2014 – 06/09/2014 ] **Professional assignment**

*The Centre for Research (CERI)-Sapienza University of Rome*

**City:** Rome

**Country:** Italy

**Main activities and responsibilities:**

Mathematical models for fluid migration in geological media

## EDUCATION AND TRAINING

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[ 2018 ] **PhD in Earth Sciences**

*Sapienza University of Rome*

**Thesis:** Modeling fluid flow in fault zones: two different-scale cases from Majella Mountain and East Pacific Rise, advisor Sabina Bigi, co-advisors: Maurizio Battaglia, Patricia M. Gregg

[ 2014 ] **Master in Exploration Geology**

*Sapienza University of Rome*

**Final grade:** 110 cum laude

**Thesis:** Ricostruzione geologico strutturale dell'area dello Stretto di Messina, Advisor: Sabina Bigi, co-advisor: Carlo Doglioni

[ 2011 ] **Bachelor in Earth Sciences**

*Sapienza University of Rome*

**Final grade:** 108/110

**Thesis:** Prospezione ed analisi gravimetrica della conca di Bojano (Molise), advisor: Michele Di Filippo, co-advisor: Maria Di Nezza

## PROJECTS

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[ 16/06/2022 – 15/06/2023 ]

**Coupling continuum and Discrete approaches in FRacture MOdeling (CODIFRAM)**

Principal Investigator of the project

[ 2017 – 2020 ] **ENabling Onshore CO2 Storage (ENOS)**

The objective of ENOS is to enable the development of CO2 storage onshore in Europe by:

- Developing, testing and demonstrating in the field, at pilot and experiment sites, key technologies specifically adapted to onshore contexts;

- Integrating CO<sub>2</sub> geological storage into the socio-economical fabric of the concerned territories;
- Contributing to the creation of a favourable environment for onshore storage across Europe.

European Team Leader: Sabina Bigi (Sapienza University of Rome)

Role: numerical modeling of fluid flow in fault zones

[ 2020 ] **Class C project with the ISCRA-CINECA for supercomputing modeling**

Principal Investigator in 2020 of a class C project with the ISCRA-CINECA for supercomputing modeling: "Fluid flow in fractured media"

[ 2019 – 2020 ]

**Source and impact of greenhouse gasses in Antarctica (SENECA), XXXV Italian expedition in Antarctica**

This project investigates the McMurdo Dry Valleys (Antarctica) to study greenhouse gas emissions from the permafrost, collecting geochemical, geophysics and petrographic data.

Principal Investigator: Livio Ruggiero (INGV)

Role: Geophysics team leader.

[ 2016 – 2018 ] **Off-Axis Seamount Investigations at Siqueiros (OASIS)**

The OASIS (Off-Axis Seamount Investigations at Siqueiros) expedition is a multidisciplinary effort to systematically investigate the 8° 20'N Seamount Chain to better understand the melting processes in the southern portion of the 9° -10° N segment of the East Pacific Rise (EPR).

Principal Investigator: Patricia Gregg (University of Illinois at Urbana-Champaign)

Role: Gravimetric and magnetometric data acquisition and analysis

[ 2017 ]

**Elaboration of the static geological model of a fault area and population of the static geological model large area with fracturing data (permeability distribution model)**

Research agreement Progetto finanziato dalla ricerca di sistema elettrico (RSE) linea di ricerca B "Monitoraggio e confinamento della CO<sub>2</sub>."

Project coordinator: Sabina Bigi

Role: numerical modeling of fluid flow in a fault zone

[ 2015 ] **Geostructural survey in the coal mine galleries**

Research agreement Sotacarbo.

Project coordinator: Sabina Bigi

Role: fracture data acquisition

## HONOURS AND AWARDS

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[ 18/12/2021 ] **Fellowship BE FOR ERC 2021** Awarding institution: Sapienza University of Rome

Winner of the Fellowship BE FOR ERC 2021 as Principal Investigator for the Project: "Coupling continuum and DIscrete approaches in FRacture MOdeling (CODIFRAM)"

[ 2017 ] **Grant for international mobility for PhD students** Awarding institution: Sapienza University of Rome

Grant for international mobility for PhD students (4000 euro) received from Sapienza University of Rome in 2017; host institution: Dept. of Geology, University of Illinois at Urbana-Champaign (USA)

## PUBLICATIONS

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[ 2022 ] **The formation of the 8° 20' N Seamount Chain, East Pacific Rise (accepted)**

**Reference:** Marine Geophysical Research

Romano V., Gregg P.M., Zhan Y., Fornari D.J., Perfit M.R., Dorsey V.W., Battaglia M.

[ 2021 ]

**3D modelling and capacity estimation of potential targets for CO<sub>2</sub> storage in the Adriatic Sea, Italy". Petroleum Geoscience, in Geoscience for CO<sub>2</sub> storage**

<https://doi.org/10.1144/petgeo2020-117?ref=pdf&rel=cite-as&jav=AM.>

**Reference:** Petroleum Geoscience, in Geoscience for CO<sub>2</sub> storage (in press)

Proietti, G., Cvetković, Saftić B., Conti A., Romano V., & Bigi S.

[ 2021 ]

**3-D Deep Electrical Resistivity Tomography of the Major Basin Related to the 2016 Mw 6.5 Central Italy Earthquake Fault**

<https://doi.org/10.1029/2020TC006628>

**Reference:** Tectonics, 40

Sapia V., Villani F., Fischanger F., Lupi M., Baccheschi P., Pantosti D., Pucci S., Civico R., Sciarra A., Smedile A., Romano V., De Martini P. M., Murgia F., Materni V., Giannattasio F., Pizzimenti L., Ricci T., Brunori C. A., Coco I., and Improta L.

[ 2020 ] **Hydraulic characterization of a fault zone from fracture distribution**

<https://doi.org/10.1016/j.jsg.2020.104036>

**Reference:** Journal of Structural Geology, v. 135

Romano V., Bigi S., Carnevale F., Hyman J. D., Karra S., Valocchi A. J., Tartarello M. C., Battaglia M.

[ 2017 ]

**Numerical modeling of fluid flow in a fault zone: a case of study from Majella Mountain (Italy)**

<https://doi.org/10.1016/j.egypro.2017.08.191>

**Reference:** ENERGY PROCEDIA, vol. 125C

Romano V., Hyman J. D., Karra S., Valocchi A. J., Battaglia M., Bigi S.

## CONFERENCES AND SEMINARS

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[ 2022 ] **A numerical model for CO<sub>2</sub> gas migration in a fault zone.** EGU General Assembly 2022

Valentina Romano, Sabina Bigi, Heeho Park, Albert J. Valocchi, Jeffrey De'Haven Hyman, Satish Karra, Michael Nole, Glenn Hammond, Giampaolo Proietti, and Maurizio Battaglia

<https://doi.org/10.5194/egusphere-egu22-11289>

[ 2022 ] **Carbon sequestration potential of the Lorestan area, Iran** EGU General Assembly 2022

Pegah Soleimani Dinani, Giampaolo Proietti, Valentina Romano, Seyed Ali Moallemi, Fabio Trippetta, and Sabina Bigi

<https://doi.org/10.5194/egusphere-egu22-12259>

[ 2021 ] **A DFN approach to understand the behavior of fluid flow in fractured rocks**  
Rome

Proietti G., Romano V., Bigi S.,

[ 2020 ] **SourceE and impact of greenhouse gasses in Antarctica: the Seneca project**  
EGU General Assembly, Wien

Ruggiero L., Sciarra A., Mazzini A., Mazzoli C., Romano V., Tartarello M.C., Florindo F., Ascani

M., Wilson G. Dagg B., Hardie R., Anderson J., Worthington R., Lupi M.m Bigi S., Ciotoli G., Graziani S.m Fischanger F., Sassi R., EGU2020-1431, <https://doi.org/10.5194/egusphere-egu2020-1431>

[ 2020 ] **Geological storage in fractured reservoirs of the Adriatic Basin**  
Roma Chiama Roma

Proietti G., Conti A., Romano V., Bigi S

[ 2018 ]

**Three-dimensional mantle melt generation, migration and extraction at the Quebrada-Discovery-GoFar fracture zones on the southern East Pacific Rise**

GSA Annual Meeting, Indianapolis

Romano V., & Gregg P.

[ 2017 ]

**Co-Convener for the EGU General Assembly session. Geological CO<sub>2</sub> storage: Fields methods and analysis of field data from sites and natural analogues.**

EGU General Assembly, Wien

[ 2017 ]

**Emplacement of the 8° 20'N Seamount Chain: Preliminary results from the 2016 OASIS Expedition**

IAVCEI Scientific Assembly, Portland

Gregg, P.M., Fornari D.J., Perfit M.R., Romano V., Wanless D., Geist D., Shirey S., Ridley W., Smith M., Lundstrom C., Zhan Y., McCully E., Trim C., Cabaniss H., Albright J., Boulahanis B., Tan Y.

[ 2017 ]

**Numerical modeling of fluid flow in a fault zone: case of study from Majella Mountain (Italy).**

EGU General Assembly 2017, Wien

Romano V., Battaglia M., Bigi S., Hyman J. D., Valocchi A.J.

[ 2017 ]

**Formation and evolution of the near axis 8°20'N seamount chain: Evidences from the geophysical data analysis**

AGU, Fall Meeting 2017, New Orleans

Romano V., Gregg P.M., Zhan Y., Fornari D.J., Perfit M.R., Battaglia M.

[ 2015 ] **Fluid flow along faults in carbonate rocks** EGU General Assembly, Wien

Romano V., Battaglia M., Bigi S.

## TEACHING EXPERIENCE

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[ 22/09/2021 ]

**Lecturer for the Summer School at the University of Camerino: The Role of the Geoscientis in the Energy Transition**

Modeling fluid migration in faults

[ 17/12/2020 ]

**Guest Lecturer for the class "Modellistica idrogeologica", (prof. Battaglia), Sapienza University of Rome, Dept. Of Geology**

Numerical modeling in fractured media

[ 08/2018 – 11/2018 ]

**Lecturer of "Methods in Applied Geophysics" (593K) at Dept. of Geology, University of Illinois at Urbana-Champaign (USA)**

Theoretical framework, geophysical data acquisition surveys (including GPR, resistivity, ERT, and bore hole) and data processing, analysis, and communication.

[ 09/2017 ]

**Guest lecturer “Fisica della Terra Solida”, (prof. Battaglia), Sapienza University of Rome, Dept. Of Geology**

[ 04/2017 ]

**Guest lecturer for the class “Volcanoes” (prof. Gregg), University of Illinois at Urbana- Champaign, Dept. of Geology**

[ 11/2015 – 12/2015 ]

**Teaching assistant for the class: "Principi di modellazione numerica applicata alle scienze della Terra" (prof. Battaglia), Sapienza University of Rome, Dept. Of Geology**

## **MENTORING**

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[ 2019 – 2021 ]

**Mentor for Giampaolo Proietti (PhD candidate, Sapienza University of Rome 2021) for PhD his thesis: CO2 storage capacity estimation of fractured saline aquifers in the Adriatic Sea**

[ 2021 ]

**Mentor for Vittorio Faustinella (Master Degree, Sapienza University of Rome, ongoing) for his thesis: Analytical model for screening potential CO2 repositories (working title)**

[ 02/2018 – 03/2018 ]

**Mentor for Chiheng Liu (PhD Peking University 2018), for his dissertation chapter on melt generation, migration and oceanic crust accretion at the Southwest Indian Ridge.**

## **FIELD WORK**

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[ 05/2022 ] **3D geoelectrical data acquisition in the Campo Felice Basin (Italy)**

[ 09/2021 ] **3D geoelectrical data acquisition in the Campo Felice Basin (Italy)**

[ 2021 ] **Data acquisition of fractures in outcrop**

Scan line acquisition for fracture network characterization (Pyrenees, Spain)

[ 17/12/2019 – 05/02/2020 ]

**Source and impact of greenhouse gases in Antarctica (SENECA), XXXV Italian expedition in Antarctica**

Geophysics team leader for the SENECA project, XXXV Italian Expedition in Antarctica. We spent 30 days in the Taylor Valley (Antarctica) to study greenhouse gas emissions from the permafrost.

[ 05/2019 ] **3D geoelectrical data acquisition in the Castelluccio Basin (Italy)**

[ 2019 ] **Data acquisition of fractures in outcrop**

Scan line acquisition for fracture network characterization (Oriolo Romano)

[ 2019 ] **Soil gas sampling and geoelectrical survey in the Ailano Basin (Italy)**

Part of the team for the characterization of gas emissions and geophysical survey in the Ailano Basin (Italy)

[ 03/12/2018 – 19/12/2018 ]

**Off-Axis Seamounts Investigations at Siqueiros (OASIS) pt. 2- Early Career Scientists Training Cruise (ECS)**

Shipboard scientific party of the OASIS expedition on board the R/V Atlantis

[ 03/11/2016 – 03/12/2016 ] **Off-Axis Seamounts Investigations at Siqueiros (OASIS)**

Shipboard scientific party of the OASIS expedition on board the R/V Atlantis and scientific party of the HOV Alvin dive number 4847 to explore submarine volcanoes along the 8°20'N seamounts chain.

[ 2015 ] **Data acquisition of fractures in outcrop**

Scan line acquisition for fracture network characterization in the Roman Valley Quarry (Majella)

[ 2015 ] **Geostructural survey in the coal mine galleries**

Scan line acquisition in a coal mine in the Sulcis Basin (Sardinia, Italy)

[ 07/2010 ] **Gravimetric data acquisition in the Bojano Basin (Italy)**

## **DIGITAL SKILLS**

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### **My Digital Skills**

Windows, MacOS, Linux(wsl) | Matlab | COMSOL Multiphysics (Advanced)

## **LANGUAGE SKILLS**

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**Mother tongue(s):** Italian

**Other language(s):**

**English**

**LISTENING C2 READING C2 WRITING C2**

**SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2**

Autorizzo il trattamento dei miei dati personali ai sensi del Dlgs 196 del 30 giugno 2003 e dell'art. 13 GDPR (Regolamento UE 2016/679) ai fini della ricerca e selezione del personale. Firma autografa sostituita a mezzo stampa ai sensi dell'art.3, comma 2, del D.Lgs.39/93