



University of Genova

**Department of Earth, Environmental
and Life Sciences**

**Doctorate Course in Earth and
Environmental Science and
Technology**

Università degli Studi di Genova



Dottorato in Scienze e Tecnologie
per l'Ambiente e il Territorio

Earth Science Curriculum

Research Theme n. 2

Titolo Interazione tra eventi sedimentari da trasporto in massa e correnti di mare profondo, e il loro impatto sugli ecosistemi sottomarini: un approccio di affioramento

Title Interplay between sedimentary mass transport events and deep-sea currents, and their impact on submarine ecosystems: an outcrop-based approach

Tutor Kei Ogata

Co-tutor Andrea Baucon

Program description including the formation program abroad

This project will implement a cross-disciplinary, field-based research, tuned up by the continuously updating marine geology database, to understand how the different depositional settings and associated benthic ecosystems respond to periodic vs. episodic seafloor reorganisation caused by mass wasting and bottom current processes. The candidate will investigate specific case studies selected from the Mediterranean Cenozoic rock record (e.g. Alps/Apennines, Pyrenees, Dinarides) utilizing state-of-the-art tools for (bio)geochemical and petrophysical profiling (e.g. GR, XRF, SEM-EDS, RockEval, stable isotopes, biomarkers), and a specifically designed combination of high-resolution sedimentological-stratigraphic and ichnological-(micro)palaeontological analyses. The overall aim of this study is to understand the interaction between submarine landslide events, bottom currents and (sub)seafloor ecosystems across different depositional environments, tectonic settings, climatic scenarios and spatial-temporal scales. The candidate is envisioned to spend a 3 to 6-months period abroad according to the following options: 1) Grupo de Estudo de Afloramentos Análogos a Reservatório Petrolíferos of the Centro de Ciências Exatas e da Terra, Universidade Federal do Rio Grande do Norte (Brazil) with Prof. Francisco Pinheiro Lima Filho, 2) Department of Stratigraphy and Palaeontology of the University of Granada (Spain) with Prof. Ángel Puga Bernabeu, or 3) Earth Surface Dynamics Research Group at the University of Geneva (Switzerland), led by Prof. Sébastien Castelltort.

Financial support: The financial support will be provided by research funds that are or will be allocated to the DISTAV Paleolab and to the tutor (KO) on top of on-going and submitted research projects. Workstation and workplace for the candidate are already available.

Tutor's publications of the last 3 years

Authors	Title	Publication	Volume	Number	Pages	Year	Publisher

Festa, Andrea; Barbero, Edoardo; Remitti, Francesca; Ogata, Kei; Pini, Gian Andrea;	Mélanges and chaotic rock units: implications for exhumed subduction complexes and orogenic belts	Geosystems and Geoenvironment	1	2	100030	2022	Elsevier
Storti, Fabrizio; Bistacchi, Andrea; Borsani, Angelo; Balsamo, Fabrizio; Fetter, Marcos; Ogata, Kei;	Spatial and spacing distribution of joints at (over-)saturation in the turbidite sandstones of the Marnoso-Arenacea Fm. (Northern Apennines, Italy)	Journal of Structural Geology	156		104551	2022	Pergamon
Senger, K; Betlem, P; Birchall, T; Dahlin, A; Horota, RK; Lord, G; Janocha, J; Kuckero, L; Ogata, K; Olaussen, S;	Svalbox: digitizing and integrating Svalbard's geoscientific record	Second EAGE Digitalization Conference and Exhibition	2022	1	1-5	2022	European Association of Geoscientists & Engineers
Koornneef, Janne M; Schriever, Vincent; Goede, Ayra; Boonstra, Julian; Gartner, Antoine JJ Bracco; Luciani, Natascia; Ogata, Kei; Segadelli, Stefano; Iannace, Alessandro; Vroon, Pieter;	Can we quantify sediment recycling in Italy's post-collisional subduction system?	2022 Goldschmidt Conference.				2022	
Betlem, P; Birchall, T; Lord, G; Løvlie, K; Nakken, L; Oldfield, S; Ogata, K; Sauvin, G; Senger, K; Skurtveit, E;	Integrated Characterization of the Faulted Caprock Shales of the Longyearbyen CO2 Lab	83rd EAGE Annual Conference & Exhibition	2022	1	1-5	2022	European Association of Geoscientists & Engineers
Segadelli, Stefano; Ogata, Kei; Cocuccioni, Marco; Gambini, Stefano; Martelli, Luca; Morandi, Lionello F; Oppo, Gabriele;	Holocene Evolution of Minor Mountain Lacustrine Basins in the Northern Apennines, Italy: The Lake Moo Case Study	Geosciences	12	7	272	2022	MDPI
Betlem, Peter; Birchall, Thomas; Lord, Gareth; Oldfield, Simon; Nakken, Lise; Ogata, Kei; Senger, Kim;	High resolution digital outcrop model of faults and fractures in caprock shales, Konudalen West, central Spitsbergen	Earth System Science Data Discussions	2022		1-30	2022	Göttingen, Germany
Tavani, Stefano; Ogata, Kei; Vinci, Francesco; Sabbatino, Monia; Kylander-Clark, Andrew; Caterino, Giovanni; Buglione, Alessandro; Cibelli, Alessio; Maresca, Augusto; Iacopini, David;	Post-rift Aptian-Cenomanian extension in Adria, insight from the km-scale Positano-Vico Equense syn-sedimentary fault	Journal of Structural Geology	168		104820	2023	Pergamon
Maresca, Augusto; Granado, Pablo; Muñoz, Josep A; Manatschal, Gianreto; Ogata, Kei; Tavani, Stefano;	A new crustal balanced cross-section through the Central Apennines (Italy)	EGU General Assembly Conference Abstracts			EGU-267	2023	
Weert, Annelotte; Vinci, Francesco; Ogata, Kei; Amory, Jerome; Tavani, Stefano;	How multiple stage rifting influences the planning of geothermal systems: a case study from the West Netherlands Basin	EGU General Assembly Conference Abstracts			EGU-291	2023	
Ogata, Kei; Weert, Annelotte; Betlem, Peter; Birchall, Thomas; Senger, Kim;	Investigating sub-seismic sedimentary intrusions in the Middle Jurassic to Lower Cretaceous Agardhfjellet Formation (Svalbard)	EGU General Assembly Conference Abstracts			EGU-14662	2023	
Festa, Andrea; Barbero, Edoardo; Dilek, Yildirim; Remitti, Francesca; Ogata, Kei; Pini, Gian Andrea;	Significance of ophiolitic mélanges and chaotic rock units in the evolution of subduction complexes and orogenic belts	EGU General Assembly Conference Abstracts			EGU-9853	2023	
Ogata, Kei; Weert, Annelotte; Betlem, Peter; Birchall, Thomas; Senger, Kim;	Shallow and deep subsurface sediment remobilization and intrusion	Geosphere	19	3	801-822	2023	Geological Society of America

	in the Middle Jurassic to Lower Cretaceous Agardhfjellet Formation (Svalbard)						
Weert, Annelotte; Ogata, Kei; Vinci, Francesco; Leo, Coen; Bertotti, Giovanni; Amory, Jerome; Tavani, Stefano;	Multiple phase rifting and subsequent inversion in the West Netherlands Basin: implications for geothermal reservoir characterization	EGUsphere	2023		1-26	2023	Copernicus Publications Göttingen, Germany
Parente, M; Amadio, S; Iannace, A; Ogata, K;	The Cretaceous Carbonates of Monte Faito	Post-Meeting Field Trip 1-17th Bathurst Meeting of Carbonate Sedimentologists			1-33	2023	
Gianese, Andrea; Franceschi, Marco; Ogata, Kei; Pogačnik, Željko; Ponton, Maurizio; Corradetti, Amerigo; Parisi, Filippo; Barago, Nicolò; Landucci, Cristiano; Kruitbosch, Edwin;	The Mass-Transport Deposits of the Paleogene Julian Basin (Italy/Slovenia): observations on the dynamic of emplacement and tsunamigenic potential					2023	-
Weert, Annelotte; Ogata, Kei; Vinci, Francesco; Leo, Coen; Bertotti, Giovanni; Amory, Jerome; Tavani, Stefano;	Multiple phase rifting and subsequent inversion in the West Netherlands Basin: implications for geothermal reservoir characterization	Solid Earth	15	2	121-141	2024	Copernicus GmbH
Betlem, Peter; Birchall, Thomas; Lord, Gareth; Oldfield, Simon; Nakken, Lise; Ogata, Kei; Senger, Kim;	High-resolution digital outcrop model of the faults, fractures, and stratigraphy of the Agardhfjellet Formation cap rock shales at Konusdalen West, central Spitsbergen	Earth System Science Data	16	2	985-1006	2024	Copernicus Publications Göttingen, Germany
Weert, Annelotte; Vinci, Francesco; Iacopini, David; van der Vegt, Paul; Tavani, Stefano; Ogata, Kei;	From hydrocarbons to geothermal energy: a case study from the Dutch subsurface	EGU General Assembly Conference Abstracts			3864	2024	
Maresca, Augusto; Granado, Pablo; Muñoz, Josep A; Manatschal, Gianreto; Ogata, Kei; Tavani, Stefano;	Rift inheritance in a fold-and-thrust belt evolution: Central Apennine crustal balanced cross-section	EGU General Assembly Conference Abstracts			5837	2024	
Lucca, Alessio; Ogata, Kei; Balsamo, Fabrizio; Borsani, Angelo; Clemenzi, Luca; Hatushika, Raphael; Tinterri, Roberto; Storti, Fabrizio;	Sedimentary facies control on fracture and mechanical stratigraphy in siliciclastics: Marnoso-arenacea formation, Northern Apennines, Italy	Marine and Petroleum Geology	167		106927	2024	Elsevier
Lucca, A; Balsamo, F; De Risio, CA; Ogata, K; Porta, F; Tavani, S; Storti, F;	Facies and mechanical stratigraphy control fracture intensity, topology and fractal dimension in folded turbidite sandstones, Northern Apennines, Italy	Journal of Structural Geology	191		105307	2025	Pergamon
Senger, Kim; Ammerlaan, Fenna; Betlem, Peter; Dumais, Marie-Andrée; Eagles, Graeme; Foster, William; Geissler, Wolfram H; Grasdalen, Sten-Andreas; Hodson, Andrew; Horota, Rafael Kenji;	Geology of Svalbard: Deep-time and Deep-Earth (SVALGEOL)	The State of Environmental Science in Svalbard—an annual report				2025	
Weert, Annelotte; Camanni, Giovanni; Mercuri, Marco; Ogata, Kei; Vinci, Francesco; Tavani, Stefano;	Displacement analysis of basin-scale reactivated normal faults: insights from the West Netherlands Basin	Journal of Structural Geology			105356	2025	Pergamon
Weert, Annelotte; Camanni, Giovanni; Mercuri, Marco;	Fault growth and reactivation in the West Netherlands	EGU General Assembly 2025				2025	

Ogata, Kei; Vinci, Francesco; Tavani, Stefano;	Basin: Implications for subsurface renewable energy projects							
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