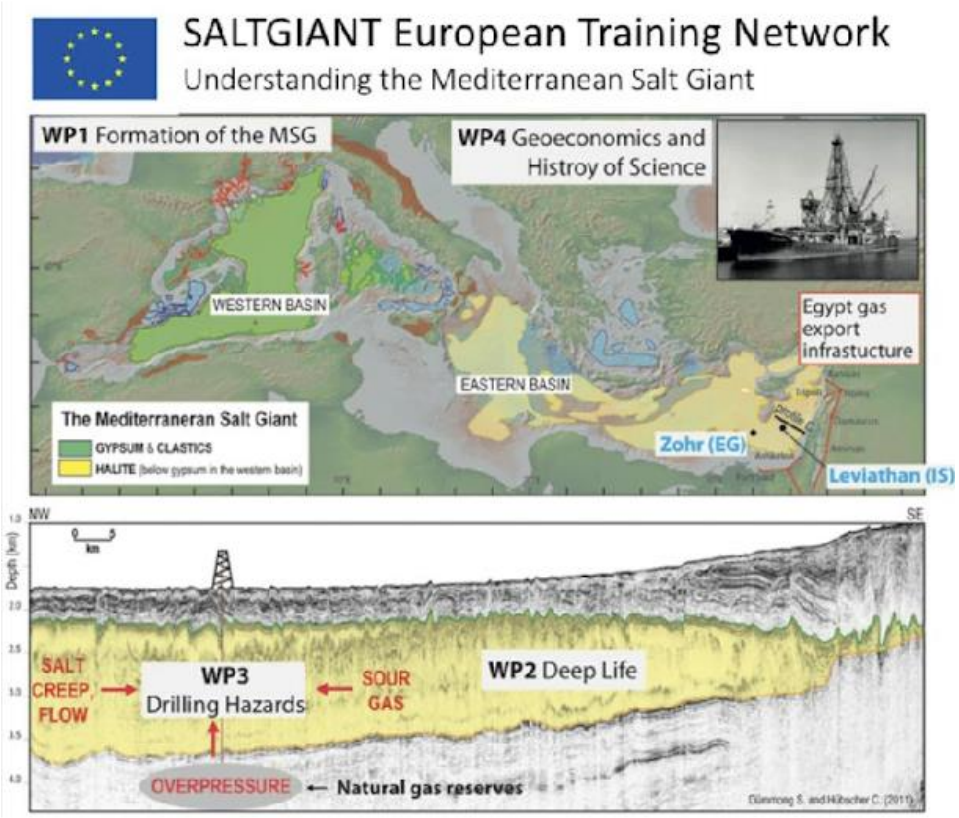
SALTGIANT Newsletter #7 – January/February 2022

by Ronja Ebner (ESR 7), Mariam Attalla (ESR 14) and the collaboration of the other SaltGiant ESRs

ABOUT SALTGIANT

SALTGIANT is a rare cross-disciplinary network of natural and social scientists dedicated to understanding the formation of the Mediterranean Salt Giant**,** one of the largest salt deposits on Earth**,** and its implications for sub-seafloor microbial life, risk assessment in the oil industry, geo-economics of the Mediterranean region and the history of oceanography.



SALTGIANT contributes to respond to the growing demand for a new generation of scientists working in the interface between the natural and social sciences**.**

SALTGIANT brings together 30 academic organizations (13 beneficiaries, 17 partners), 7 private sector Oil&Gas companies, 2 mining sector companies, 1 biotechnology company, 1 museum and 1 specialist in transferable skills training from 11 countries to stimulate interdisciplinary and intersectorial knowledge exchange between geologists, geophysicists, geochemists, microbiologist, geographers and historians in a network with 15 PhD students at its core.

For more information about the SALTGIANT project, check our website.

SALTGIANT is developed within the EU MEDSALT COST action: https://medsalt.eu/the-project/

SALTGIANT is an European projcet funded by the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement n° 765256.

NEWSLETTER

1. **SaltGiant Events - Back to the field with caution:**

- Short course and Workshop in Banja Luka
- Drilling training school in Sorbas
- Dead Sea Field course in Israel

2. **A project comes to its end**
3. **SaltGiant last publications**
4. **Upcoming events in 2022**

1. SaltGiant Events - Back to the field with caution

- **Short Course on "The History of Salt", 4th - 8th October, 2021, Banja Luka**

During the past six months, SaltGiant resumed its workshops in presence and held interesting field trips after the partial lifting of covid restrictions everywhere.

In October 2021, ESRs gathered once more since the beginning of Covid-19 epidemic in the calm city of Banja Luka in the Republic of Bosnia and Herzegovina. The workshop on the history of salt was conducted over four days. It tackled the process of salt exploitation from pre-historical to modern times. Organized by Dr Ivana Pandzic, from the Museum of the Republic of Srpska, the workshop started with a series of lectures by herself, Jesús-F. Carrasco-Vayá (IPAISAL), Jules Vleugels (Lt.Col. of the Royal Netherlands Airforce, retired), among others, on the different historical technical methods used for salt extraction and how they shaped the economic structures of their respective societies. In addition, several lectures highlighted the current efforts to preserve the traditional methods of salt extraction as part of humanity's collective tangible and intangible heritage.

SALTGIANT is an European projcet funded by the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement n° 765256.

The workshop also included a visit to the very interesting museum of the Republic of Srpska that hosts a large collection of natural and anthropological materials, telling the story of the region. One day of the workshop was dedicated to the field trip in Tuzla, the city of salt, where the ESRs had the opportunity to visit the archaeological sites that held Neolithic settlements where salt extraction and pottery making were one of the main socio-economic activities. The Museum of Salt in Tuzla tells the story of salt production in the city, conserving some of the oldest excavated pieces such as pot fragments. The museum is hosted by an old factory museum, partially destroyed, dating back to the 15th century. However, a part of the old factory is still operational and provides one of the main sources of income for the region in Bosnia and Herzegovina.

- **Field Course "Drilling Training School, 25th - 31st October, 2021, Sorbas**

Organized by Johanna Lofi, Philippe Pezard (SaltGiant PIs) and Fadl Raad (ESR 3) from CNRS Montpellier with support from SaltGiant Partner Organization, the University of Granada, and SaltGiant beneficiary the National Institute of Oceanography and Applied Geophysics (OGS Trieste – Italy), the course provided a unique opportunity to see borehole drilling and logging activities combined in the field and gathering new data on the Messinian gypsum deposits found in the Spanish marginal basin of Sorbas.

SALTGIANT is an European projcet funded by the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement n° 765256.

Fadl Raad, ESR 3 and Hanneke Heida, ESR 2, wrote about the hands-on experience during the course:

"... the Sorbas basin is considered a key basin in the understanding of the formation and evolution of the Mediterranean Messinian Salt Giant, where a magnificent and almost complete Messinian gypsum deposit outcrops all around the basin."

".. the drilling of four boreholes by the drilling team from Granada University, (which) combined cover(ed) the majority of the Messinian succession within the Torralba gypsum mine, reaching into the lower parts of the Gypsum succession. Combined together, the four boreholes (SG0, SG01, SG2 and SG03) covered a sediment thickness of about 150 meters. These boreholes allowed the participants to get hands-on experience with acquisition of data in the boreholes as well as seeing first-hand how cores are recovered and described in the field."

SALTGIANT is an European projcet funded by the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement n° 765256.

- **Field Course “Dead Sea and Hypersaline Environment”, 21st - 25th November, 2021, Israel**

This course was something most of us were frantically looking forward to and the fact that it took place in the only 3 weeks during which it was possible for us to enter the country, seems almost like a miracle (it wasn’t a miracle, it was due to insane organisation skills).

The aim of the course was to give ESRs direct access to one of Earth’s largest hypersaline systems, where numerous chemical and physical processes relevant to MSG science presently occur. The bulk part of the course was fieldtrips with presentations addeding in depth information in the evening. A competent team consisting of Nadav Lensky, Zohar Gvirtzman, Ido Sirota, Haggai Eyal , Ziv Mor and Liran Ben Moshe (all from the Geological Survey Institute in Israel) lead the attendants through a broad range of topics concerning the deposits of the Dead Sea. Unfortunately, none of the authors of this newsletter could attend this course in person and could only follow the presentations online, but those who touched the formations with their own hands were not shy of updating us about the things they did and learned.

The value of this course was not only in the theory that was taught and the experts that provided it, but it was also the unique opportunity to transform theoretical knowledge into actual experience. While the salt tectonics of the MSC only appear as transparent lines on seismic images, the view of Mount Sodom (Hebrew: הר סדום, *Har Sedom*) can be studied in a very different way.

Not only the old structures of that area were eye opening. The speed at which the geology is shaped there gives a new perspective (“When you see you year of birth in a geological section, you feel really old when there's quite a thick layer of evaporites deposited above.”). This incredibly wide range of processes that can be observed in the field there, happening in real time at rates that are rarely seen in geological context were truly impressive.

SALTGIANT is an European projcet funded by the European Union’s Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement n° 765256.

“I never realized how fast the changes in this environment were happening until I saw the roads, shorelines and entire resorts abandoned or replaced in the last decades. For me, this really gave a new meaning to the phrase "field laboratory"”

SALTGIANT is an European projcet funded by the European Union’s Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement n° 765256.

2. A project coming to its end ….

… and we all have feelings about it

I learned more how the scientific reasoning works and how the process of making a hypothesis is starting from field observations to lab analyses to statistics. I also understand how models works much better, which I would have never imagined.

I am both exited to see what the future holds and to start some new adventure but at the same time a bit scared and sad of probably not continuing to work with all the people involved on the project.

I would like to do a post doc and try my chance in academia

I learned how to open my mind to super various scientific disciplines by attending courses and talks quite far away from my field, this allowed me to have a better idea of the "big picture" and to consider collaborations outside of my field.

My plan is to look for a post-doc, preferably continuing for at least a couple of years more working on the Messinian Salt Giant in order to finish all the unfinished and overwhelming stuff that I started during the PhD.

I did not expect to learn too much in such a short time, and this is thanks to the multidisciplinary aspect of the project and the openness and availability of every single person in the project.

I have the feeling that I didn't accomplish enough, that time is flying and that I won't have enough time to submit something that I'm proud of

Sad but satisfied!!!

I feel that there is so much more to learn

Not knowing is what drove me in the first place to do research. I don't know if I am good enough until I try. Uncertainty in life to me means possibility.

I will continue to do research.

SALTGIANT is an European projcet funded by the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement n° 765256.

3. SG last publications

Bulian, Francesca, et al. "Messinian West Alboran Sea record in the proximity of Gibraltar: Early signs of Atlantic-Mediterranean gateway restriction." *Marine Geology* 434 (2021): 106430.

Bulian, Francesca, et al. "Geochemical and micropaleontological evidence of the Messinian Salinity Crisis preconditioning phase in the West Alboran Basin." *EGU General Assembly Conference Abstracts*. 2021.

Heida, Hanneke, et al. "Flexural-isostatic reconstruction of the Western Mediterranean during the Messinian Salinity Crisis: Implications for water level and basin connectivity." *Basin Research* (2021).

Raad, Fadl, et al. "The Messinian Salinity Crisis deposits in the Balearic Promontory: an undeformed analog of the MSC Sicilian basins??." *Marine and Petroleum Geology* 124 (2021): 104777.

Bellucci, M., Pellen, R., Leroux, E., Bache, F., Garcia, M., Do Couto, D., Raad, F., Blondel, S., Rabineau, M., Gorini, C., Moulin, M., Maillard, A., Lofi, J., Del Ben, A., Camerlenghi, A., Poort, J., & Aslanian, D. (2021). *A comprehensive and updated compilation of the seismic stratigraphy markers in the Western Mediterranean Sea* [Data set]. SEANOE. https://doi.org/10.17882/80128

Andreetto, Federico, et al. "High Mediterranean water-level during the Lago-Mare phase of the Messinian Salinity Crisis: insights from the Sr isotope records of Spanish marginal basins (SE Spain)." *Palaeogeography, Palaeoclimatology, Palaeoecology* 562 (2021): 110139.

Blondel, Simon, et al. *Late Miocene to present-day tectonostratigraphy of the northern central Algerian Basin: Evidence of a contractional salt system from reprocessed seismic data*. No. EGU21-9640. Copernicus Meetings, 2021.

Dale, Michael S., et al. "The Messinian Salinity Crisis as a trigger for high pore pressure development in the Western Mediterranean." *Basin Research* (2021).

Travan, Gaia, et al. "Gravity gliding and spreading in a compressional setting: the example of the Algerian margin." *EGU General Assembly Conference Abstracts*. 2021.

SALTGIANT is an European projcet funded by the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement n° 765256.

4. Upcoming events in 2022

- **SaltGiant writing retreat in Toscany (March, 7th to 11th)**

Next March 8 SaltGiant ESRs and 3 PIs (Giovanni Aloisi IPGP, SaltGiant coordinator, Angelo Camerlenghi from OGS and Wout Krijgsman from Utrecht University) will met in Toscany for a writing retreat. The 5 days will be focus on work towards a paper presenting a model for the MSC based on the results of the SaltGiant project.
The participants will surely enjoyed the calm of the countryside and the Gargonza medieval village where some work sessions will be organized.

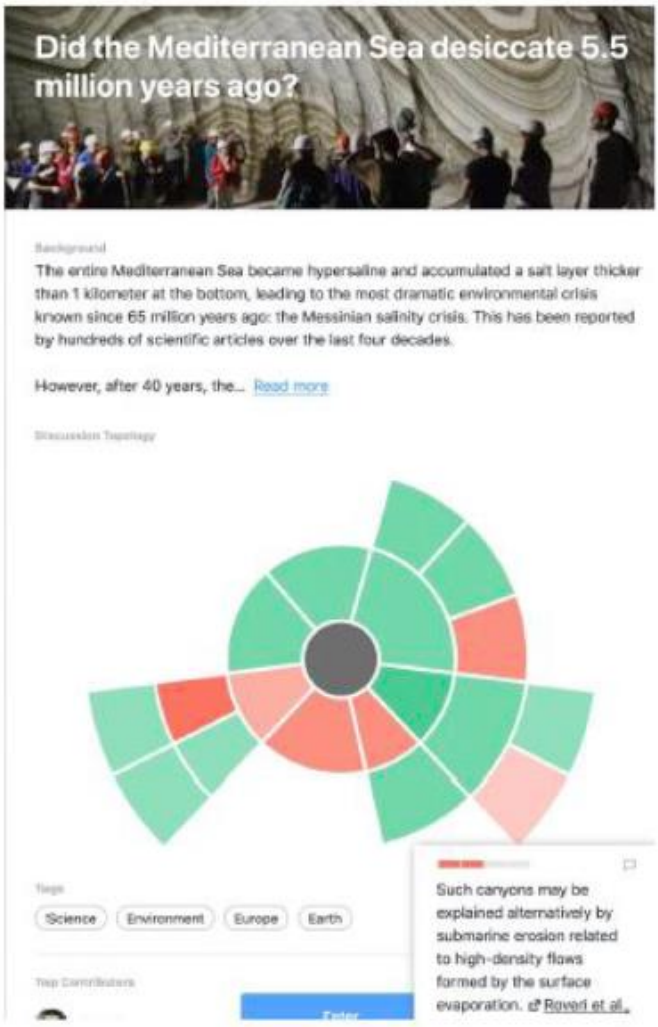
- **SaltGiant Final event in Paris (May, 17th to 19th)**

With the SaltGiant ETN project approaching completion (July 2022), all the SaltGiant consortium members (and more !) will meet once more for a final event that will be held in situ at IPGP in Paris between May, 17th and 19th 2022 (Covid permitting). This last event will be the occasion to disseminate SaltGiant science outside of the consortium with the presentations of our 15 ESRs that will summarize their 3 years work and also presentations from other consortium members as well as invited guests.
This event will be also accessible online and the agenda will be detailled soon in our website.

SALTGIANT is an European projcet funded by the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement n° 765256.

Keep up with the project through social media!

Website : https://www.saltgiant-etn.com
Blog : https://thesaltgiantfellowship.wordpress.com
Twitter : https://thesaltgiantfellowship.wordpress.com
LinkedIn : https://www.linkedin.com/company/etn-saltgiant/
Kialo discussion : https://www.kialo.com/



Join now the SaltGiant discussion on Kialo contributing the existing (published) scientific arguments you have found in the literature. We currently have around 20 claims and counterclaims already, each with the corresponding reference.
You can also review which arguments you find more sound than others.
Full address:
https://www.kialo.com/did-the-mediterranean-sea-desiccate-55-million-years-ago-9531

SALTGIANT is an European projcet funded by the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement n° 765256.

SALTGIANT is an European projcet funded by the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement n° 765256.