

Marine Geodesy – Lab 5 – June 17th 2021

Presentation of work done in lab4 by each student.

- marmara_direct_path_acoustic**
 Lange, Dietrich, Heidrun Kopp, Jean-Yves Royer, Pierre Henry, Ziyadin Çakir, Florian Petersen, Pierre Sakic, u. a. „Interseismic Strain Build-up on the Submarine North Anatolian Fault Offshore Istanbul“. Nature Communications 10, Nr. 1 (8. Juli 2019): 1–9. <https://doi.org/10.1038/s41467-019-11016-z>.
 Nicholas
- waveglider_japan_gnssa**
 Iinuma, Takeshi, Motoyuki Kido, Yusaku Ohta, Tatsuya Fukuda, Fumiaki Tomita, and Iwao Ueki. “GNSS-Acoustic Observations of Seafloor Crustal Deformation Using a Wave Glider.” *Frontiers in Earth Science* 9 (March 11, 2021): 600946. <https://doi.org/10.3389/feart.2021.600946>.
 Nadine + Tristan
- santorini_seafloor_pressure**
 Vilaseca, Géraud; Deplus, Christine; Escartín, Javier; Ballu, Valérie; Nomikou, Paraskevi; Mével, Catherine; Andreani, Muriel (2016): Pressure, tilt, temperature and conductivity monitoring within the Immersed Santorini Caldera during Jul 2012 - Sep 2013. PANGAEA, <https://doi.org/10.1594/PANGAEA.855882>.
 Hendrik + Johannes
- monterey_gssm_pressure**
 Wilcock WSD, Manalang DA, Fredrickson EK, Harrington MJ, Cram G, Tilley J, Burnett J, Martin D, Kobayashi T and Paros JM (2021) A Thirty-Month Seafloor Test of the A-0-A Method for Calibrating Pressure Gauges. *Front. Earth Sci.* 8:600671. <https://doi.org/10.3389/feart.2020.600671>.
 Ziqing

Lab	Date	Work
4	June 10 th	Think carefully about the data. How it needs to be worked with to get ground positions/motions.
5	June 17 th	Organize a methodology to study the dataset. Display graphically some results.
6	June 24 th	Go further in the results to interpret and discuss.
7	July 1 st	No online lab. Maybe a mid-term exam to give you an idea of the final exam.
8	July 8 th	Finish a complete report on the dataset with methodology, results and discussion.
9	July 15 th	Work on one of the other dataset + discuss.
10	July 22 nd	Work on one of the other dataset + discuss.

Hint n°1:

- i. Generate appropriate plots of the input data: map, histogram of values, etc.
- ii. Identify outliers.
- iii. Identify missing data (see vi. in hint n°1).
- iv. Define strategy for dealing with outliers and missing data (e.g. delete, replace with total mean, interpolate from nearby values, etc.)
- v. Update plots to show the clean data

Answer and complete this list depending on your data and ideas.

Hint n°2:

In all project, you need a workflow planning representing the input data, the output results and the logical actions between them. Try building a first draft of a general workflow for your dataset.

Hint n°3:

Start the data analysis by transforming parameters, performing frequency analysis and plotting new results.