



## **Big Data and Sapropel: a challenge**

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Science advances and with it the storage of large amounts of data. The need to use this data efficiently, quickly and safely is possible thanks to the Big Data science that allows us storage and relationship data in order to obtain new knowledge. Various discipline of science such as ecology, health or genetic have published numerous articles about the advantages of Big Data and the need to train in this field for better comprehension and use.

Aim of my project, is to take advantage of Big Data for the study of the sedimentary layers that occurs in the Mediterranean Sea called Sapropels. The objective of this work is to find new patterns that help researchers to understand the mechanisms of Sapropel formation. In order to achieve new results, a deep knowledge of the sapropel dedicated literature is needed together with basic skills of softwares for managing the huge amount of data stored either in the web or still in the hands of researchers. This allowed me to realize the Entity-relationship (E-R) model of the database that permits to relate the data and to avoid errors in the introduction and extraction of them. In the last phase, I have introduced the data of the publications in the database. The introduction of data is a continuous work since the more data we have the more reliable results we will obtain. A further step, although contemporaneous to the implementation of the database, is the design of queries that allows to compare the data in search of new relationships or previously undiscovered patterns.

Although a brand new approach, Big data in Geoscience is growing and reveal a great potential to exploit the high diversity of data due to the ability to search into massive amounts of information to reveal hidden patterns. For this reason, it is important to set up a scientist community able to manage this discipline in order to adopt this approach for future work.