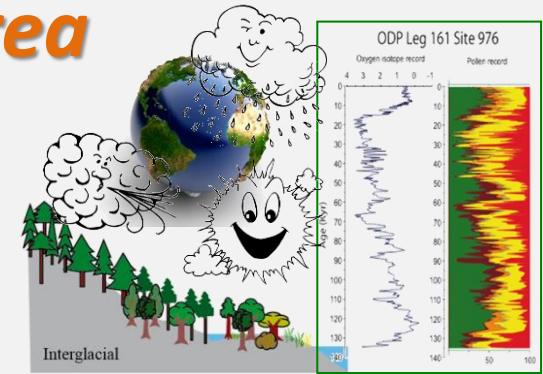
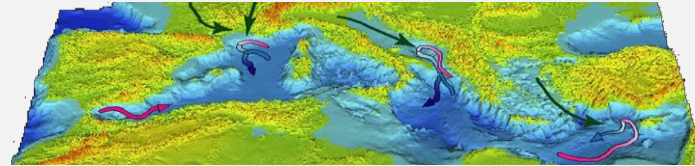


Quaternary paleoenvironments and paleoclimate in the Mediterranean area

Firenze 14-16.12.2021



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The future of Mediterranean ecosystems and landscapes is clearly tied to water availability and global climate change. While modern vegetation data from the region provide a baseline for understanding relationships between aridity and vegetation composition, paleoecological records bring support for understanding vegetation responses at longer time scales. Paleoecological records show that aridity, as a feature of the Mediterranean basin, appeared early, gradually increasing up to the present time. Italy represents one of the most informative Mediterranean areas to: (i) reconstruct the response of vegetation to various climatic stresses; and (ii) assess the likely future behavior of Mediterranean plants. Furthermore, the Italy's rich geological and stratigraphical record makes it (iii) a significant source of information on the history of Mediterranean.

The course focuses on understanding the:

1. *response of vegetation/environment (from 2.6 Ma) to variations in climatic forcing on orbital and millennial/submillennial (e.g. Heinrich events, D-O, Bond cycles) timescales;*
2. *driving and environmental context of the migration and successive colonization of hominins;*
3. *interglacial features from 2.6 Ma for a better evaluation of the future and length of the Holocene;*
4. *impact of Human practices in the Mediterranean environments through palynological tools;*
5. *inputs of multi-method climate reconstructions from pollen data and comparison with other proxy-inferred climate reconstructions;*
6. *past biodiversity trajectories (e.g., plants, fungi, algae) and ecosystems dynamics (e.g., landscapes, aquatic ecosystems);*
7. *paleoecological insights into the development of sustainable environmental strategies.*

Quaternary paleoenvironments and paleoclimate in the Mediterranean area – Main Program

14.12.2021 – SALA STROZZI

- 10.30-13.00** Introduction to palynology. From the samples to the palynological slides. Pollen, spores and dinocysts morphology, palynofacies, counts, palynological diagrams.
- 14.30-17.30** Paleoenvironment and paleoclimate changes in the Mediterranean during the Quaternary.
- 17.30-18.30** Introduction to practical palynology: exercises, flora, vegetation, climate, human impact, comparison with other marine and continental proxies.

15.12.2021 – SALA STROZZI

- 8.30-12.30** Non pollen palynomorphs as a complementary tool to reconstruct human environments.
- 14.00-18.30** PRACTICAL PALYNOLOGY:
- 14.00-16.00:** Non pollen palynomorphs, observation, data bases, cases of study.
- 16.00-16.30:** How to prepare samples for palynological studies - Video of N. Degl'Innocenti & G. Niccolini.
- 16.30-18.30:** Pollen and dinocysts: morphology.

16.12.2021 – SALA STROZZI

- 8.30-11.30** Multi-method climate reconstructions from pollen data and comparison with other proxy-inferred climate reconstructions.
- 11.30-13.00** Cases of study in the whole Mediterranean area and application of transfer functions to reconstruct paleoclimatic parameters (T, P, ...).
- 14.30-17.30** Practical palynology: exercises and correction, flora, vegetation, climate, human impact, comparison with other marine and continental proxies.

The seminar, open to students, PhD and young researchers, is carried out thanks to the Erasmus program. It has the Patronage of AIQUA and represents a pre-INQUA2023 congress activity.

Venue: Dipartimento di Scienze della Terra, via G. La Pira 4 Firenze (Sala Strozzi).

Courses will be delivered on site and/or in videoconference with a link sent on request.

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