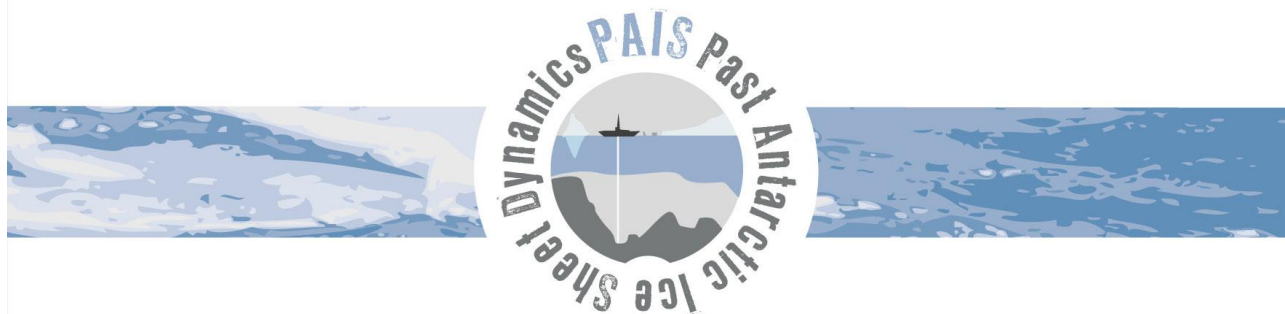


CONVEGNO INTERNAZIONALE “PAST ANTARCTIC ICE SHEET DYNAMICS”
Trieste 11-15 settembre 2017
<http://pais-conference-2017.inogs.it/>



EDUCATIONAL LABORATORIES FOR SECONDARY SCHOOLS

Organized by Museo dell'Antartide (MNA), University of Trieste

STAZIONE MARITTIMA

TUESDAY 12TH SEPTEMBER 2017 from 9:00 to 12:00

Contacts: museoantartide@units.it

Museo Nazionale dell'Antartide



With the collaboration of

Istituto Nazionale di Oceanografia e di geofisica Sperimentale OGS



Università di Trieste



UNIVERSITÀ
DEGLI STUDI DI TRIESTE

l'International Ocean Discovery Program (IODP) – Italia



PROGRAMME

Every class could participate to a maximum to 4 laboratory activities which have to be pre-booked.

During the coffee break (10.30-11.30) some students met with some researchers who briefly explained to the students what was happening in the conference and made a brief tour of the stands and poster area.

Laboratory 1) led by students of class 2A of the middle school Giancarlo Roli, Trieste, supervised by Prof. Massimo Presti. ACC (Antarctic: timeline and climate). The activity was aimed at students from the fourth year of primary school to the third year of middle school. Visiting classes were assisted by Dr. Marzia Umani (University of Trieste) and Pietro Merandino, Leonardo Dal Ben, Angela Balzano (Petrarca high school students). Maps of the variations of the conformation and position of the Antarctic continent, since the Pangea onwards, with the participants invited to link some climatic and ecological features illustrated on playing cards. At the same time, three quiz games with multiple choices on Antarctic climate, environment, biology, the food chain and adaptation took place. The activities are carried out in teams formed within the visiting class, and are guided by the students of class 2A. Duration: 30 minutes. Materials was partially readapted and modified by Massimo Presti from discoveringantarctica.org and other sources .

Laboratory 2) led by operators of MNA and students of the university of Trieste (Mila Erbisti, Fiorenza Torricella): Arctic/Antarctic: it concerned the two polar regions situated at the 'edge' of the Earth: Arctic and Antarctic. The two regions have some similar but also different features, through a Venn diagram (a way of graphically representing the differences and the similarities between the two groups). A Venn diagram was drawn as circles partially overlapping. Instead, in the areas not overlapping there were those things which belong only to one of the groups. In this laboratory activity with the help of a pack of calamity cards, where images relative to the poles were illustrated (animals, vessels, etc.), the kids had to order them in the Venn diagram in such a way to indicate whether they represent the Arctic, Antarctic or both polar regions. Duration: 20 minutes.

Laboratory 3) led by operators of MNA, researchers (Gianguido Salvi) and students of the university of Trieste (Tommaso Cadamuro): Clues explained the Antarctic through the study of the seabed deposit. The experiment consists in the reconstruction of continental ice fluctuations over the sea through the recognition of different sedimentary samples in sediment cores. It was explained how marine deposit varies next and under the ice layer. Afterwards, students were invited to reproduce these fluctuations with some deposit samples models. Duration: 30 minutes.

Laboratory 4) led by operators of MNA (Katja Mignozzi) and students of the university of Trieste (Sonia Manzan, Francesco Zoia, Manuela Rizzi): Food chain: the krill is an organism which is eaten by most marine organisms of the Antarctic. However, it is also fished by men for its high level of Omega 3. The proposed experiment underlined what happens is this important ring of the food chain goes missing. Duration: 30 minutes.

Laboratory 5) led by operators of MNA, researchers (Ioanna Protopsalti) and students of the university of Trieste (Francesco Zoia): Thermal insulation of Antarctic animals: Whales, Weddell seals, and penguins swim in the frozen waters of Antarctica. Under the skin of these animals there is a thick layer of fat. Some are also covered with fur or feathers. This activity will reveal the insulating properties of animal fat and furs that are exploited by these animals to isolate themselves from the cold. Duration: 30 minutes

Laboratory 6) led by researchers of OGS (Riccardo Geletti) with the collaboration of Univ. of Trieste (Mocnik Arianna and Marco Saule) and of the Petrarca high school students: use radar to listen the electromagnetic waves to understand what's underground. Experiment with the use of waves emitted by a special radar, known as georadar or GPR (ground penetrating radar) to reconstruct sediment geometry and superficial buried rocks. The signal is sent to a computer that displays all signals and reconstructs the substrate geometry. Duration: 30 minutes.

Laboratory 7) led by researchers of OGS (Renata Giulia Lucchi) with the collaboration of Univ. of Trieste (Rudi Conte, Massimo Bellucci) and a Galilei high school student (Marco Aurelio Ricci): Salty Waterfalls: the Engine of Oceanic Streams. Experiment with a transparent tank containing sea water. Cold super-salty water coloured blue was poured into the tank simulating the brine that forms at the poles and visibly sank in the tank (namely in the oceanic basins). In the same way fresh water coloured red and poured into the tank (ice melting as well as unblock of a river) will remain at the surface. Duration: 15 minutes.

Laboratory 8) led by operators of IODP-Italy (Annalisa Iadanza, Angelo Danesi, Alessandra Civica) and Univ. Padova (Jacopo Boaga,) with the collaboration of Petrarca high school students: Fiorenza Atena and Matija Vidmar): construction of paper boats. The paper models reproduce the two deep drilling vessels which are used in the IODP the International Ocean Discovery Program <https://www.iodp.org/> to take samples of rock and deposit of the seabed of all the oceans, included those of the polar areas. The programme is international and Italy is a party (see infos in Italian <http://www.iodp-italia.cnr.it/index.php/it/>). This type of perforations can go as deep as various kilometres under the earth shell. The Cretaceous-Paleogene (K/Pg) Mass Extinction Boundary core replica (originally sampled during ODP Leg 171B) has been illustrated too. Duration: 30 minutes.