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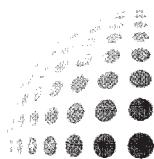
Programm und Zusammenfassung der Tagungsbeiträge



Institut für Meteorologie und
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$\pm 109 \text{ kg m}^{-2} \text{ a}^{-1}$ and the firn core from 1989 (1975-1988) a value of $353 \pm 109 \text{ kg m}^{-2} \text{ a}^{-1}$. It can be observed that the accumulation rates are lower in the surroundings of the bases than at the array located further south and at greater distance to the coast. In addition, the values calculated by means of stake readings are lower than those calculated from firn cores.

Terrestrial Vegetation Analysis on the Argentine Islands Archipelago

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Maritime Antarctica experiences one of the steepest regional climate warming trends, which makes it necessary to establish monitoring of the influence of climatic changes on terrestrial habitats. One of the most appropriate sites to launch such monitoring is the Ukrainian Vernadski station (Argentine Islands region) located in the epicenter of the warming processes. Supported by National Antarctic Scientific center of Ukraine, we have launched a long-term program to monitor the status of Antarctic herb tundra formation on the Argentine Islands region. The fundamental basis in this program should be a complete inventory of the existing distribution locations of the Antarctic herb tundra formation in which *Colobanthus quitensis* as yet remains rare in the region. All inhabited areas are described in detail using a special blank form which includes detailed orographic, geobotanic, and population characteristics of the habitat. The form also contains information on natural (birds, pinnipeds) and anthropogenic impacts. Besides, forms for the biometry of both vascular plants have been prepared. The detailed geobotanic composition of a cenosis is studied by sampling its different constituents with indication of their role in the total vegetation cover according to the Braun-Blanquet method. Concurrently, a system of study areas have been defined on Galindez Island for which the abovementioned parameters will be monitored annually. In perspective, it is planned to monitor, based on a set of defined indicator traits, some species representing cryptogam formations.

Genetic monitoring, specifically investigation of the influence of habitat on cytological and molecular genetics traits of Antarctic vascular plants, constitutes a separate part of the monitoring program.

We invite all who is interested for collaboration and its concurrent implementation in other regions of the Antarctic.

Trace metals in Antarctic bivalve shells - Indicators of environmental change

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Contrary to paleo-climatic events the ongoing climate change scenario is well documented by current environmental measurements for many areas of the world. Especially in remote regions such as coastal and shelf areas of the Antarctica Peninsula conditions to conduct field studies, especially those requiring long-term uninterrupted recordings, are still very problematic. For these systems archives may be excellent alternatives. In the present study bivalve shell archives will be investigated with the aim to document changes of near shore biogeochemistry caused by glacial alteration during the last century.

The Antarctic Peninsula including the study area Potter Cove on King George Island (Isla 25 de Mayo, South Shetland archipelago) are characterized by melt water driven sediment mineral discharge into the near shore environment. Owing to its origin from glacial ablation, the marine sediment of Potter Cove is labeled with the chemical signature of the eroded parent rock material. Due to high sedimentation rates, sediment cores in this region are applicable proxies for detection of recent and sub recent environmental change in the geochemical environments. But these archives are strongly disturbed by bioturbation by the abundant macro benthic infauna, mainly bivalves and polychaetes. Further in the shallow coastal areas, sediments are dramatically disturbed through frequent iceberg scouring. We are looking for new additionally archive types to improve environmental documentation for the past decades.

The Antarctic soft shell clam, *Laternula elliptica*, was chosen as a possible source of such undisturbed geochemical archives, because it generates a new shell growth ring each year. It is composed of an organic and an inorganic matrix in each annual growth layer. *Laternula elliptica* is extremely abundant, tolerates high sediment loads and has become a dominant faunistic component within the benthic communities in the sediment impacted zones.