Geophysical Research Abstracts,
Vol. 11, EGU2009-13296, 2009
EGU General Assembly 2009

MissMarble, a multi-user interdisciplinary data base of marble for archaeometric, art historian and restoration use

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During a research project a lot of data are compiled by literature research, field studies, surveys, measurements. After the termination of the project these data remain in general unpublished, and are stored in the respective research institutions analogously or digitally. There exist the countless data which are stored on different media often decentralised in databases of different formats. All these data would be ready in principle for any scientific purposes on request; however, only the author has the information about the storage system of the data. This makes it difficult to verify the conclusions of the publications in the light of the gathered data; and this makes it almost impossible to prepare the data for later use in answering research-related questions. Sometimes unnecessarily repeated work is done; consequently the resources of the respective research equipment are needlessly used. To avoid duplicated research, the researchers are expected to publish the data together with the scientific contributions to provide public access to the original information.

Nevertheless, it is often difficult to fulfil this demand. The standards for raw data publication are quite different from the requirements for research publications. The storage must be organised in such a way that it is conceivable for the researchers worldwide. Furthermore the data must be filed in reliable data centres where they are maintained and are put into archives for long time and remain available. The co-ordinated and clear availability of the research data serves all scientists - interdisciplinary and internationally. Via the availability of the raw data the original research results gain also importance and become valuable.

Restorers, researchers working in various fields of humanities, museologists and specialists managing collections, are basically interested in the construction of data retrieval system of primary data. Thus, the storage, access and safety of scientific data can be assured via co-ordinated activity of the data producers.

The aim of the MissMarble project was to develop an interdisciplinary data base management system for analytical results of marble occurrences (geological samples) and marble artefacts (archaeological and architectural objects). The system is characterised by user friendly interfaces for data entry, storage, continuous dissemination, and exchange. Furthermore the system provides practical hints to understand the techniques applied on various samples and relate them to other literature data. The goal of the developed system is to provide help for data comparison, provenance analyses and to reveal missing analytical results.

The various user groups have different access rights. Beside of the Editors, Contributors are a special user group who are allowed to enter their own analytical results. Conceptually we intend to manage the results of analyses of both type of material (archaeological and geological samples) together to handle the data in the same manner. It enhances the overlaps and the gaps in the analytical results defining the further analyses to be done. The data entries are organized in the following scheme: sample identification; methods applied on the sample; colour and fabric; mineralogical composition; textural properties; chemical and isotope geochemical composition; engineering physical properties. Dependencies on the sample type: (in case of geological sample) geological classification (age, facies); (in case of archaeological samples) archaeological description of the objects; probable provenance (if determined); conservational and restoration experience.

The system is designed so that further amendments and extensions are possible without data loss. It is updated and tailored according to the experience gathered during its use. To this end a pinboard is used for user feedback. The system functionalities, data structure and data content are regularly revised according to the requirements of the users and data providers. However, the amendments should be done so that the changes do not hamper the comparisons with the previous data and applied methods.