



Ice cave research in Germany – past, present and future?

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Caves are concentrated in various karst areas of different geologic origin in Germany, while ice caves are only known in a reduced number of places. In the older literature till the 19th century some ice caves are also mentioned and described in Central German Uplands, but mostly in the Alpine karst areas of Untersberg near the Austrian border. These were studied by Eberhard Fugger in more detail. A short overview of the most important historical works will be given in the first part of the presentation. Fugger, for example, used his results to give evidence for the theory about static ice caves. His work entered also the well-known international ice cave literature in the 19th century. In the 20th century especially Fritz Eigert conducted studies in Schellenberger ice cave at Untersberg from the late 1950s to 70s, where he measured air temperatures and changes in ice mass on private interest. This study represents today the longest measurement series, which is available for German ice caves. Only recently his family kindly gave us his data and notes for analysis. In 2007, after a break of nearly 40 years, we started with systematic investigations on Schellenberger ice cave again. Selected results of both studies will be presented in the second part of the presentation. The aim is to determine the general thermal characteristics of the cave and show possible correlation between temperatures and cave ice dynamics. The last part will focus on ice caves recently discovered by speleologists in the German Alpine karst areas. This should give an overview on possible new sides for ice cave research in Germany and show the importance of cooperation between both, university and private speleology.

With this presentation we would like to show possibilities of past, present and future studies on German ice caves as basis for a discussion in the meeting about new approaches and studies also in cooperation with other countries. The ice cave research of the last decades and centuries was mainly characterized by studies focusing on single ice caves, which lead to a certain amount of data and knowledge about specific ice caves in the different countries. But for the future ice cave research we would like to suggest interdisciplinary, international and integrative studies in order to bring ice cave research from its geographical isolated knowledge to a next level, which concentrates on the dynamics of ice caves in different climate zones and allow us to set up more general models.