

Detection of the soil heat flux and its effect on the cave climate in different lava tubes on Big Island

MICHAEL KILLING-HEINZE, Andreas Pflitsch, Steve Smith

michael.killing@rub.de

t

So far there is little knowledge about the influence of the soil heat flux on the climate conditions of lava tubes and caves in general and what role this belongs to the transmission of the situations of the external atmosphere to what is happening in the cave.

To gain knowledge about these relationships in 2014 we started a research project in different lava tubes on Big Island, HI, where the soil heat flux is detected by temperature measurements with data loggers in different heights of the cave rocks and on the surface.

Those measurements will be supplemented with results of investigations with a thermal camera of selected measurement locations and in future with airflow-measurements as well as measurements of radiation.

Aim of the study is to capture the influencing factors of the soil heat flux and its effect on the cave climate.

In this presentation the issue, the choice of measurement locations, the measurement concept, the measurement methodology and first measurement results will be presented.