ABSTRACT
SPELEO BRAZIL 2001
Brasília DF, 15-22 de julho de 2001

13th International Congress of Speleology
4th Speleological Congress of Latin América and Caribbean
26th Brazilian Congress of Speleology

Three-Dimensional Modelling of Karst Development on the Catchment Scale

Sebastian BAUER; Rudolf LIEDL; Martin SAUTER
Institute of Geology, University of Tuebingen, Sigwartstrasse 10, 72076 Tuebingen, Germany,
sebastian.bauer@uni-tuebingen.de

Aim of this work is to study the genesis of karst aquifers at the catchment scale. In particular the influence of different boundary conditions and the competing influence of different processes are studied. A numerical modelling tool has been developed, based on a dual porosity approach, which allows the simulation of the characteristic dualistic flow behaviour in karst aquifers as well as of the karstification process.
Results of three-dimensional modelling studies are presented with scenarios to investigate the possibility of deep phreatic karstification as result of valley incision. This is done using varying boundary conditions for the recharge and the river. The type of karstification developing depends strongly on the geological setting and the type of boundary conditions applied.