

SUMMARY

The thesis deals with tracer tests conducted repeatedly at several sites under different flow rates. Number of parameters vary depending on flow rates, such as mean residence time, tracer concentration and recovery, the character of breakthrough curve. I compared results from various sites, including the results of my own measurements to see if it is some general pattern. As it turned out, generalization is not possible. Mean residence time can decrease with increasing discharge in one system, while it increases in the other one. The same can be said about tracer recovery. Both parameters are controlled mainly by geometry of karst conduits, especially by volume of phreatic and vadose spaces in individual levels above and below the lowest water table in the system. Breakthrough curve plays essential role in the description of the karst system. It's character varies depending on the flow rate and allows to characterize the karst system. By it's interpretation, it is possible to detect or locate bifurcation and describe the water distribution into discrete conduits.