This thesis is divided into two parts. The first one is focused on tracer tests carried out in several karst conduits in the Moravian Karst. Several conduits were tracer repeatedly during different discharges. Flow velocity, flow cross section area, longitudinal dispersivity and Peclet number were plotted against discharge for each studied conduit. Based on this comparison of parameters I deduced characteristics of karst conduits for example presence of phreatic channel or vadose channel or multiple channels. I also focused on comparison of my results with publications dealing with the same subject elsewhere in the world. Second part of the thesis is based on measurements of water stage, dischargeand temperature by pressure transducers at inlet and outlet points of karst conduit logged in 10 minutes interval. The goal was to find a relation between the velocity of hydraulic response propagation and discharge. Unfortunately, results show no correlation because there are probably more parameters influencing the velocity such as ratio of vadose/phreatic segments which may change rapidly during flood events.