



Recession Cloud as Indicator of Karstic Spring Hydrograph Characteristics

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Extensive theory about groundwater depletion in karst aquifer reflected through spring recession curves has been developed. To skip theoretical presumptions about the analysis of karst spring recession, the concept of recession cloud has been introduced. The recession cloud is defined as set of all N_{rec} recession curves in the spring hydrogram. Inside of the apparent chaotic set of all recession discharges some statistical structures can be observed. The cloud could be described with the set of parameter curves (e.g average curve, median curve...). It has been shown that these curves can be modeled with simple exponential or power models. The model curves converge in one point at concentration time t_c and concentration discharge Q_c . On the basis of extreme value theory has been also shown that it is possible to model return period of the convergence. This convergence point is indicator of karstic aquifer development.