

Paper Number: 2824

The Concept of Aquifer System Specification by the Use of Spatial Data

Modelling

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Increasing demand for groundwater data used in decision support processes as well as stress on groundwater being in many cases a main source of drinking water make it important as a part of Spatial Data Infrastructure (SDI). Processing and management of groundwater data need understanding and proper definition of aquifer system concept. The modern technologies allow to describe the system by the use of data modelling tools (United Modelling Language – UML) to make the idea machines readable. The paper presents discussion of aquifer system concept, because it determines the relationship with other hydrogeological classes according to system theory. The discussion of different views on the concept of geomatical description of the aquifer system, as an example of a system functioning in nature.

In modern hydrogeological studies the concept of a dynamic model describing the circulation of groundwater in opposition to the static model that was used previously is accepted. The essence of the differences in these concepts is the approach to the location of the aquifer system in the model, and an indication of relationships and dependencies of the geological conditions. Aquifer system conceptual data model should be important insert to the consideration of GroundWater Markup Model (GWML) implementation.

Key words: Aquifer System, Spatial Data Infrastructure, hydrogeological model

