

Model coupling for forecast of groundwater evolution under intensive human activities

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Abstract Intensive human activities impact on the natural water cycle dramatically, making the natural water cycle comply with artificial features. But until now the driving forces of groundwater system evolution were not fully understood due to the complexity of the groundwater system structures and the uncertainty of affecting factors. This paper presents the analytic methodology to describe the relation of groundwater evolution and driving forces based on historical data analysis. It studies the general law of groundwater evolution based on a case study in the Haihe River basin, a typical area with dramatic groundwater change under natural precipitation attenuation and gradual increase in water demand.

Key words water cycle; groundwater; water allocation; economic development; inter-basin water diversion