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## Parameter Identification in Confined Aquifers using a Predictor-Corrector Scheme of the Differential System Method

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The inverse problem of parameter identification consists in the optimal determination of model parameters using water-level observations. We are concerned with the estimation of the transmissivity and storativity in a confined aquifer in transient conditions. One of the approach used to solve this problem, is called the Differential System (DS) method. It is based on the solution of a Cauchy problem. Because of the numerical derivatives need to be calculated, the issue with this method is when noisy data are used. In this work, we propose an improvement to the DS method by using a predictor-corrector scheme. For the predictor part, we consider an estimator obtained from the Bayesian formulation problem. The study case presented here is a synthetic but realistic aquifer; the model was chosen in order to check how the estimation is made in complicated conditions.

### References

- [1] Vázquez, R., Giudici, M., Ponzini, G., and Parravicini, G. (1997). The differential system method for the identification of transmissivity and storativity. *Transport in Porous Media*, (26):339–371.
- [2] Moreles, M. A., Vázquez, R., and Avila, F. (2004). The differential system method for parameter identification; unconfined aquifer case. *Computational Geosciences*, (8):235–253.

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