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15. Numerical Analysis and Scientific Computing

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Handrock-Meyer, Sybille, Technical University Chemnitz, Germany, Bruckner, Gottfried, Langmach, Hartmut, Weierstrass-Institut for Applied Analysis and Stochastic, Berlin, Germany

An inverse problem from the 2D-groundwater modelling

The inverse problem of identifying the coefficient in the main term of an elliptic differential equation describing the filtration of groundwater is considered. For solving this prooblem we use a modification of a direct method of Vainikko combined with Tikhonov's regularization. In practice onlyvery few measurements are at disposal. To counter this difficulty a data smoothing procedure using the given information about both the coefficients and the data is proposed. The results are joint work with G. Bruckner and H. Langmach. Reference: G. Bruckner, S. Handrock-Meyer, H. Langmach, An inverse problem from the 2D-groundwater modelling, to appear: Inverse Problems (see also WIAS Preprints 250 (1996) and 343 (1997).