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K. Renee Fister (renee.fister@murraystate.edu), Mathematics & Statistics, 6C Faculty Hall, Murray, KY 42071, **Maeve L. McCarthy*** (maeve.mccarthy@murraystate.edu), Mathematics & Statistics, 6C Faculty Hall, Murray, KY 42071, and **Seth F. Oppenheimer** (seth@math.msstate.edu), Mathematics & Statistics, P. O. Drawer MA, MSU MS 39762. *The identification of a time dependent sorption parameter from soil column experiments.*

Soil column studies are used frequently in seeking to understand the behavior of a particular contaminant in a saturated homogeneous soil of a given type. The concentration of the contaminant is modelled by a parabolic partial differential equation. We seek to identify the sorption partitioning coefficient as a function of time from limited boundary data. We discuss an output least squares formulation of the problem with Tikhonov regularization. We explicitly characterize a source condition that determines the rate of convergence of the method. Numerical examples are presented. (Received October 03, 2005)