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Liliana Borcea* (borcea@umich.edu), Department of Mathematics, 2074 East Hall, 530 Church St, Ann Arbor, MI 48109-1043. *A model reduction approach to inversion for a parabolic partial differential equation.*

I will describe a novel numerical inversion method for a parabolic partial differential equation arising in applications of control source electromagnetic exploration. The unknown is the electrical resistivity in the earth and the data are time resolved measurements of the magnetic field. The method described uses model reduction ideas and has been implemented in one and two dimensions. (Received January 14, 2015)