

International J. of Math. Sci. & Engg. Appls. (IJMSEA)
ISSN 0973-9424, Vol. 7 No. IV (July, 2013), pp. 29-36

**REVISED TIKHONOV REGULARIZATION METHOD FOR THE
CAUCHY PROBLEM OF AN ELLIPTIC EQUATION WITH
VARIABLE COEFFICIENTS**

AI-LIN QIAN

Department of Mathematics and Statistics,
Hubei University of Science and Technology,
Xianning, Hubei, 437100, People's Republic of China
E-mail: junren751113@126.com

Abstract

In this paper, we consider a Cauchy problem for an elliptic equation with variable coefficients. Within the framework of general regularization theory, we present a revised Tikhonov regularization method to stabilize the problem. Moreover, Hölder-type stability error estimate is proved for this regularization method. According to the regularization theory, the error estimate is order optimal. A numerical result is reported.

Key Words : *Inverse problems, Elliptic equation, Tikhonov regularization, Error estimate.*

2000 AMS Subject Classification : 35R30.

© <http://www.ascent-journals.com>