

A GRADIENT RECOVERY OPERATOR BASED ON AN OBLIQUE PROJECTION*

BISHNU P. LAMICHHANE[†]

Abstract. We present a construction of a gradient recovery operator based on an oblique projection, where the basis functions of two involved spaces satisfy a condition of biorthogonality. The biorthogonality condition guarantees that the recovery operator is local.

Key words. gradient recovery, a posteriori error estimate, biorthogonal system

AMS subject classifications. 65N30, 65N15, 65N50

*Received March 22, 2009. Accepted for publication February 16, 2010. Published online June 4, 2010. Recommended by Y. Achdou.

[†]School of Mathematical & Physical Sciences, Mathematics Building - V235, University of Newcastle, University Drive, Callaghan, NSW 2308, Australia (Bishnu.Lamichhane@newcastle.edu.au).