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**Minah Oh\*** (ohmx@jmu.edu), Dept. of Mathematics and Statistics, James Madison University, 305 Roop Hall, MSC 1911, Harrisonburg, VA 22807, and **Jay Gopalakrishnan**, Department of Mathematics, University of Florida, FL 32611. *Commuting Smoothed Projectors in Weighted Spaces.*

We construct smoothed projectors in weighted Sobolev spaces that arise naturally when modeling electromagnetic problems under axial symmetry and performing dimension reduction via cylindrical coordinates. The advantages of these projectors are that they are continuous in the weighted  $L^2$ -norm, and that they also preserve the commuting diagram properties. These operators are then used to prove a quasi-optimality result of the edge finite element approximation when applied to the axisymmetric Maxwell equations on bounded Lipschitz domains. (Received September 18, 2010)