1077-65-2184 **Ethan Wyatt Lockhart*** (ewlockha@ncsu.edu), **Arundhati Bagchi Misra** and **Hyeona Lim**. *Modified Chambolle Method for Speckle Image Denoising.*

Image denoising is an important image processing procedure for various real world applications. It is often necessary as a pre-processing for other imaging techniques such as segmentation and zooming. Chambolle has produced a quick dual approach algorithm based on partial differential equations, and the method minimizes the total variation norm for image denoising. However, this algorithm is intended for images with synthetically added Gaussian noise only. We develop a new denoising model and associated numerical methods for natural speckle noise images based on the Chambolle algorithm. We enhance the new method using central difference methods for computational accuracy and texture free residual (TFR) parameterization to preserve textures and fine structures. Our computational results compare favorably to the original Chambolle algorithm and other conventional denoising methods. (Received September 21, 2011)