1081-65-210 **Ming-Jun Lai** and **Jingyue Wang*** (jwang@math.ku.edu), Department of Mathematics, University of Kansas, Lawrence, KS 66045, and **Qianying Hong**. *Convergence Analysis of a Finite Difference Scheme for the Gradient Flow associated with the ROF Model.* Preliminary report.

We present a convergence analysis of a finite difference scheme for the time dependent partial different equation called gradient flow associated with the Rudin-Osher-Fatemi model. We devise an iterative algorithm to compute the solution of the finite difference scheme and prove the convergence of the iterative algorithm. (Received February 12, 2012)