

**Meeting:** 1002, Pittsburgh, Pennsylvania, SS 15A, Special Session on PDE-Based Methods in Imaging and Vision

1002-65-111      **Richard Tsai\*** (ytsai@math.utexas.edu), Dept of Math, University of Texas at Austin, Austin, TX 78712, and **Selim Esedoglu**. *Threshold dynamics for the piecewise Mumford-Shah Functional.*

We proposed two fast schemes for constructing minimizing sequences for the Mumford-Shah functional for image segmentation applications. The proposed methods are motivated by the threshold dynamics of the Merriman-Bence-Osher scheme that is proposed for mean curvature motion. We present several numerical examples that is carefully designed and tested to reflect the behavior of the proposed schemes. The complexity of our schemes is  $O(N)$ , where  $N$  is the number of pixels in a given image.

This is a joint work with Selim Esedoglu. (Received September 09, 2004)