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

1002-49-141 **Luminita Aura Vese*** (lvese@math.ucla.edu), Department of Mathematics, UCLA, 405 Hilgard Avenue, Los Angeles, CA 90024, and **Triet Le**. *Decomposition of images into cartoon and texture using the total variation and div(BMO).* Preliminary report.

An important problem in image analysis is the separation of large scales (cartoon features) from smaller periodic scales (texture) in images. Yves Meyer suggested that models such as Mumford-Shah or Rudin-Osher-Fatemi can be viewed as decomposition models into cartoon and texture, and not only as image segmentation and restoration models. In these two models, the texture component is modeled by a square-integrable function. Following Y. Meyer, we propose and analyze a model where the textured component belongs to the space div(BMO) instead of L2, while the cartoon component is a function of bounded variation. Theoretical, approximations and numerical results of image decomposition will be presented. (Received September 12, 2004)