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**Triet M. Le** (tle@math.ucla.edu), 405 Hilgard Avenue, Los Angeles, CA 90095-1555, **John B. Garnett** (jbg@math.ucla.edu), 405 Hilgard Avenue, Los Angeles, CA 90095-1555, and **Luminita A Vese\*** (lvese@math.ucla.edu), 405 Hilgard Avenue, Los Angeles, CA 90095-1555. *Image decomposition models using bounded variation and generalized homogeneous Besov spaces*. Preliminary report.

Abstract: This talk is devoted to the decomposition of a given image or function  $f$  into two components,  $f = u + v$ . A variational model based on the so-called K-functionals or J-functionals is being proposed. The component  $u$  is modeled as a piecewise-smooth component, to represent the geometric or cartoon features of the data  $f$ , while  $v = f - u$  represents the oscillatory or texture component. Motivated by remarks of Y. Meyer, we propose to use more refined texture norms to model  $v$ , instead of the standard  $L^2$  penalty. In particular, we use Besov spaces of generalized functions for  $v$ , in a variational-PDE framework. Theoretical, computational and experimental results will be presented. (Received February 07, 2006)