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Andrea L Bertozzi* (bertozzi@math.ucla.edu), 520 Portola Plaza, Los Angeles, CA 90095, Los Angeles, CA 90095, and **Ekaterina Merkurjev** and **Tijana Kostic**. *An MBO scheme on graphs for segmentation and image processing.*

We present a computationally efficient algorithm utilizing a fully or semi-nonlocal graph Laplacian for solving a wide range of learning problems in data clustering and image processing. Combining ideas from L1 compressive sensing, image processing and graph methods, the diffuse interface model based on the Ginzburg-Landau functional was recently introduced for solving problems in data classification. Here, we propose an adaptation of the classic numerical Merriman-Bence-Osher (MBO) scheme for graph-based methods and also make use of fast numerical solvers for finding eigenvalues and eigenvectors of the graph Laplacian. We present various computational examples to demonstrate the performance of our model, which is successful on images with texture and repetitive structure due to its nonlocal nature. (Received September 25, 2012)