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Yao Lu* (yao1@med.umich.edu), Med-Inn Building C474, 1500 E. Medical Center Dr., Ann Arbor, MI 48109. *Regularization Methods for Digital Breast Tomosynthesis Reconstruction.*

Digital breast tomosynthesis (DBT) is an emerging imaging modality that can provide quasi-three-dimensional structural information of the breast. Low-dose x-ray projections of the breast are acquired at a small number of angles over a limited angular range. A set of tomosynthesized slices is reconstructed from the limited-angle projections. Detection of microcalcifications in DBT is challenging because of the large breast volume to be searched for small, subtle signals and the noise in the reconstructed volume. In this talk, we present some regularization methods developed for enhancement of microcalcifications in DBT. Potential microcalcifications are differentiated from the noisy background by the local geometric or statistical information. Different degrees of regularization are applied to the signal or noise classes such that the microcalcifications will be enhanced while noise is suppressed. (Received August 08, 2010)