Jennifer L Mueller* (mueller@math.colostate.edu), 101 Weber Hall, Department of Mathematics, Colorado State University, Fort Collins, CO 80523, and Diego A C Cardenas and Sergio S Furuie. Regularized reconstructions by the Distorted Born Iterative Method for low frequency ultrasound computed tomography.

While conventional ultrasound is generally considered unsuitable for pulmonary imaging, low frequency (10 – 750 kHz) ultrasound has been shown to penetrate the lung, motivating our work in developing a tomographic pulmonary ultrasound imaging system. In this work, tomographic reconstructions of sound speed from numerically simulated low frequency ultrasound data on a ring array of transducers are computed using the distorted Born iterative method (DBIM) with total variation (TV) regularization with an automatic choice of regularization parameter. (Received August 13, 2020)