Abstract Submitted
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The *Ex-Vivo* Detection of Human Breast Cancer through High-Frequency Ultrasound[1] SCOTT JENSEN, TIMOTHY DOYLE, VERN HART, JEFFREY GOODRICH, Utah State University, LEIGH NEUMAYER, RACHEL FACTOR, Huntsman Cancer Institute — *Ex-vivo* studies of human mammary surgical tissues were performed at the Huntsman Cancer Institute in order to develop an ultrasonic method to detect microscopic cancer in surgical margins during breast conservation surgery. Both pitch-catch and pulse-echo measurements were acquired using a high-frequency ultrasound system operating at 50 MHz. The ultrasonic tissue signatures were categorized into three groups: Malignant tumors, fibroadenomas, and normal tissues. An analysis in the frequency domain was performed to detect frequency dependencies and unique signatures for each of these groups. Signatures were then used in a final analysis to determine future possibilities in systematic cancer detection using this approach. Results of this study and spectral comparisons are reported.

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