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Human Liver Tissue Characterization Using Backscattered Ultrasound Signals Mean Scatterer Spacing

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Abstract : Using the backscattered ultrasound signals, we studied the periodicity of in vitro healthy and pathological liver tissue, we utilized the mean scatterer spacing (MSS) as a parameter of tissue characterization, estimated by: Spectral Auto-Correlation (SAC), Spectral Correlation of the autoregressive model (AR-SAC) and the Discrete Wavelet Technique (DWT), in comparison between this three method, the result of simulation confirm that DWT with Fourier Transform together (DWT with FT) can provide a very effective tool to extract the MSS from such structure and characterize the tissue.

Keywords : Periodicity, Liver tissue, Mean scatterer spacing, Backscattered Ultrasound Signals