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Titel des Beitrags: Full-wave intravascular ultrasound simulation from histology.

Abstract: In this paper, we introduce a framework for simulating intravascular ultrasound (IVUS) images and radiofrequency (RF) signals from histology image counterparts. We modeled the wave propagation through the Westervelt equation, which is solved explicitly with a finite differences scheme in polar coordinates by taking into account attenuation and non-linear effects. Our results demonstrate good correlation for textural and spectral information driven from simulated IVUS data in contrast to real data, acquired with single-element mechanically rotating 40 MZH transducer, as ground truth.

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