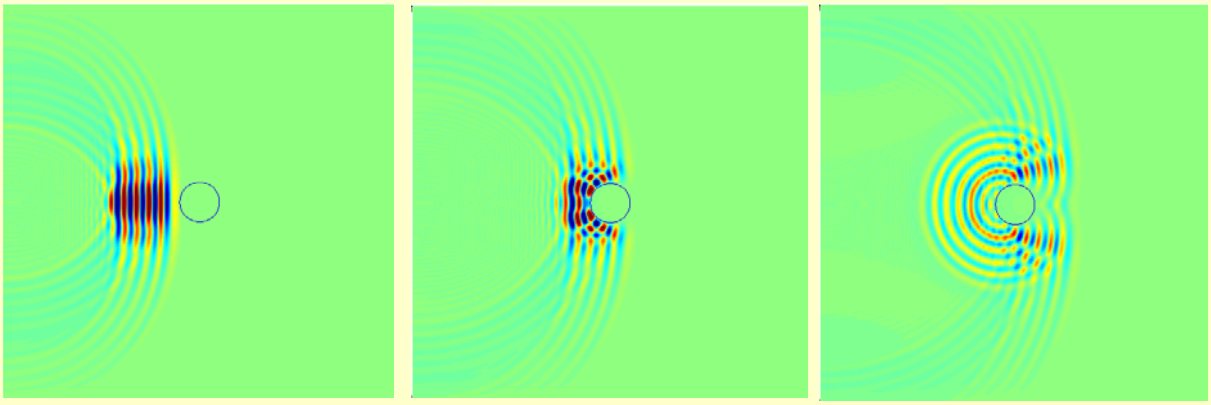
SoundSim

2.5D Acoustic Simulation
Core Beta Release

Thank you for trying the beta release of the SoundSim's 2.5D acoustic simulation core. This release is for academic and testing use only. SoundSim is an elastic and acoustic simulation toolbox for MATLAB. Two sample scripts are included to demonstrate the 2.5D acoustic simulation core and are described below.



This release simulates a circular disk transducer which emits an acoustic tone burst into a fluid or gas. A sphere scatterer can be placed in the path of the acoustic waves to study the acoustic wave interaction. The radius and frequency of the transducer can be adjusted along with the size, location, and material of the sphere scatterer.

RunAcousticCyl_AirBubble.m
This script simulates a 5Mhz tone burst scattering from a 1mm diameter air bubble in water. The large acoustic impedance mismatch causes most of the acoustic energy to scatter from the bubble (pictured above).

RunAcousticCyl_OilDroplet.m
This script simulates a 5Mhz tone burst scattering from a 1.5mm diameter oil (motor) droplet in water. The similar acoustic impedance allows most of the acoustic energy to pass through the oil droplet but the waves do slightly speed up as they pass through the oil droplet.

Tip: Both scripts return the amplitude (Aline) recorded by the transducer.

Please send any questions, comments, or suggestions to
kevinrudd@soundsim.com

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www.soundsim.com

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