

Example of OptiNav Nearfield Acoustic Holography Imaging Mode (GINV) Including Far Field Synthetic Data

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Outline

- Setup
- Acoustical Source Images
- Far field projection

2 coherent broadband sources, 180° phase difference
(one white noise signal generator, lead polarization swapped between speakers)
Array-speaker distance = 0.28 m. Distance between speaker centers = 0.25 m
Array diameter = 0.35 m (Array 24 Jr.)
Test time: 6 seconds.



Array Camera View



Beamforming Image for 64-6000 Hz



1/3 Octave Band
Beamforming and Acoustic
Holography Images

1/3 Octave
Band

Beamforming

GINV

200 Hz



250 Hz



315 Hz



400 Hz

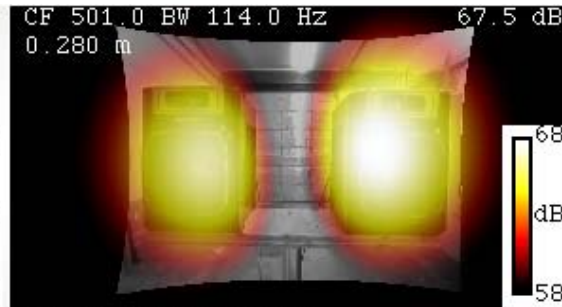


1/3 Octave
Band

Beamforming

GINV

500 Hz



630 Hz



800 Hz



1000 Hz



1/3 Octave Band

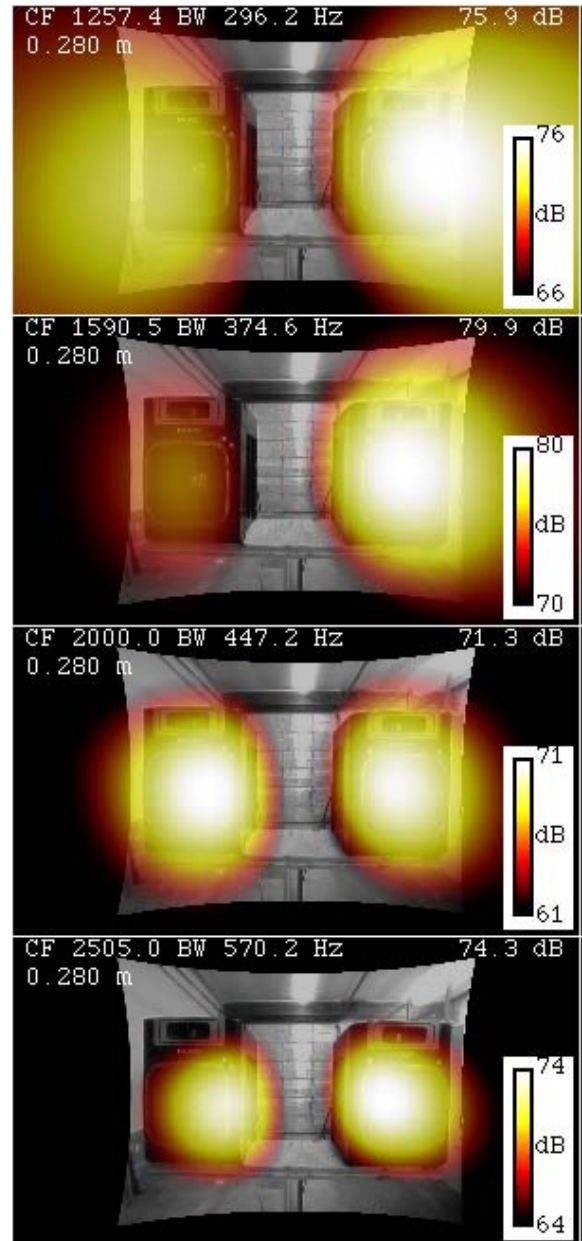
1250 Hz

1600 Hz

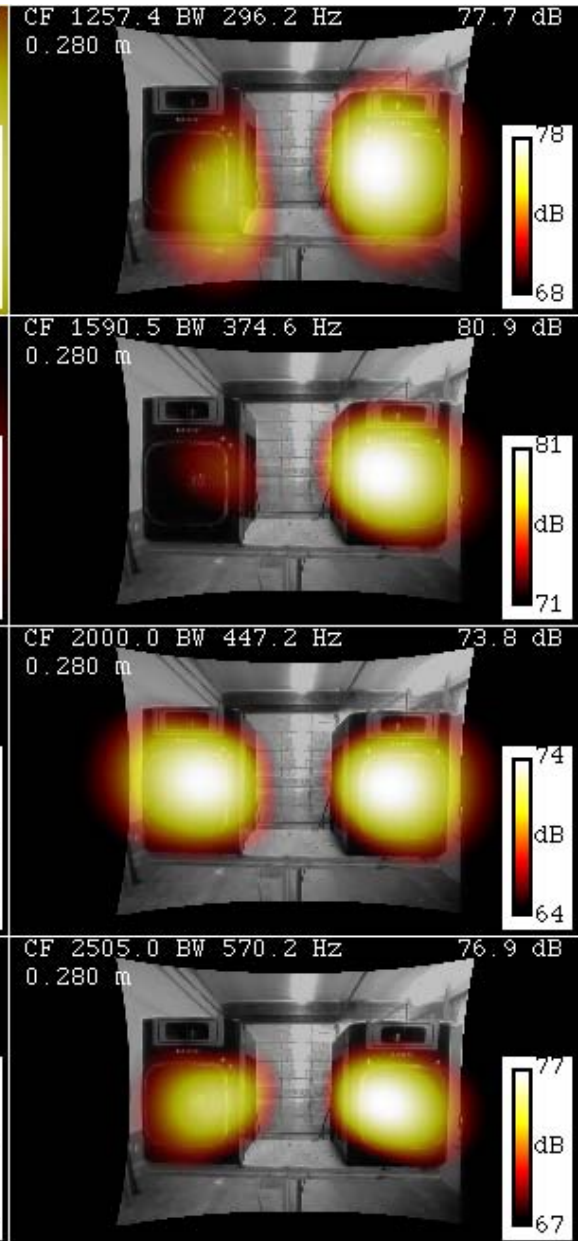
2000 Hz

2500 Hz

Beamforming



GINV



1/3 Octave Band

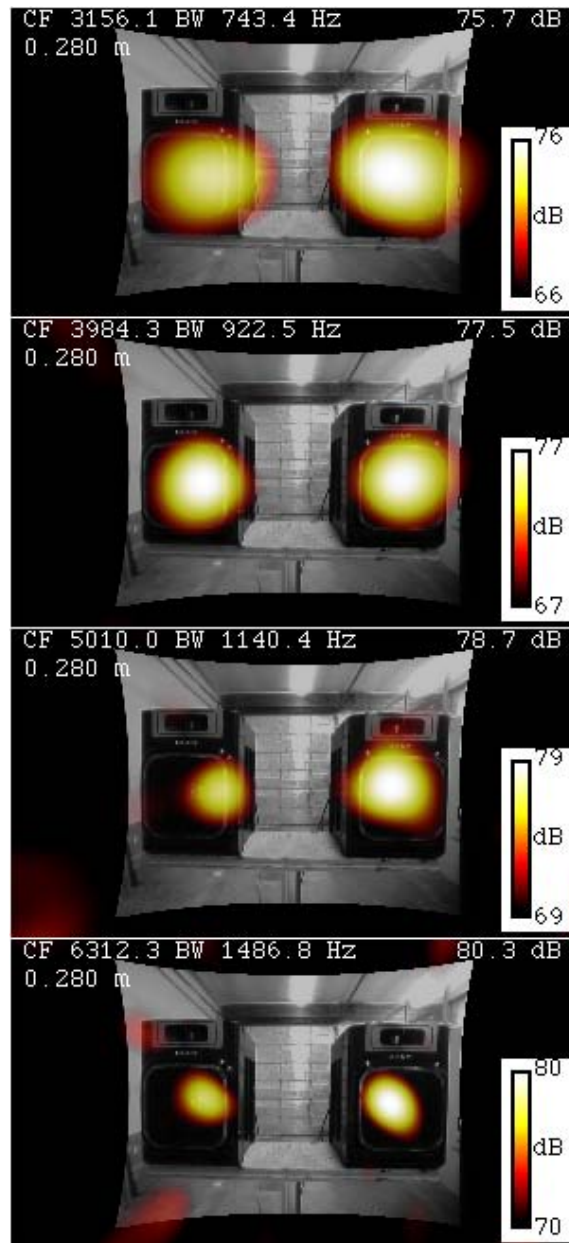
3150 Hz

4000 Hz

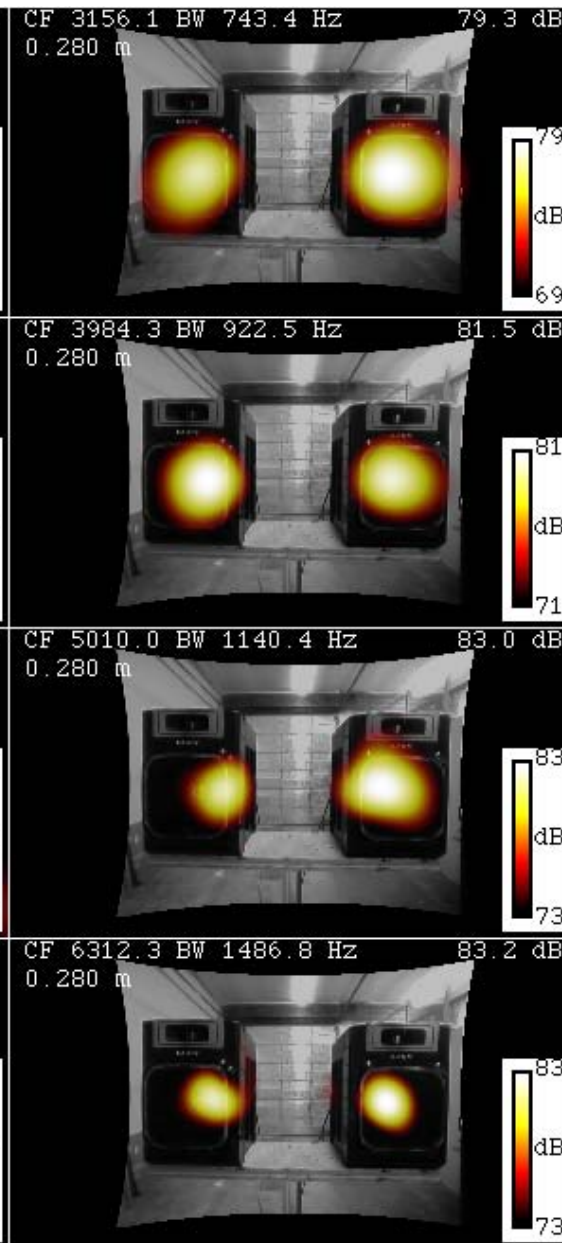
5000 Hz

6300 Hz

Beamforming



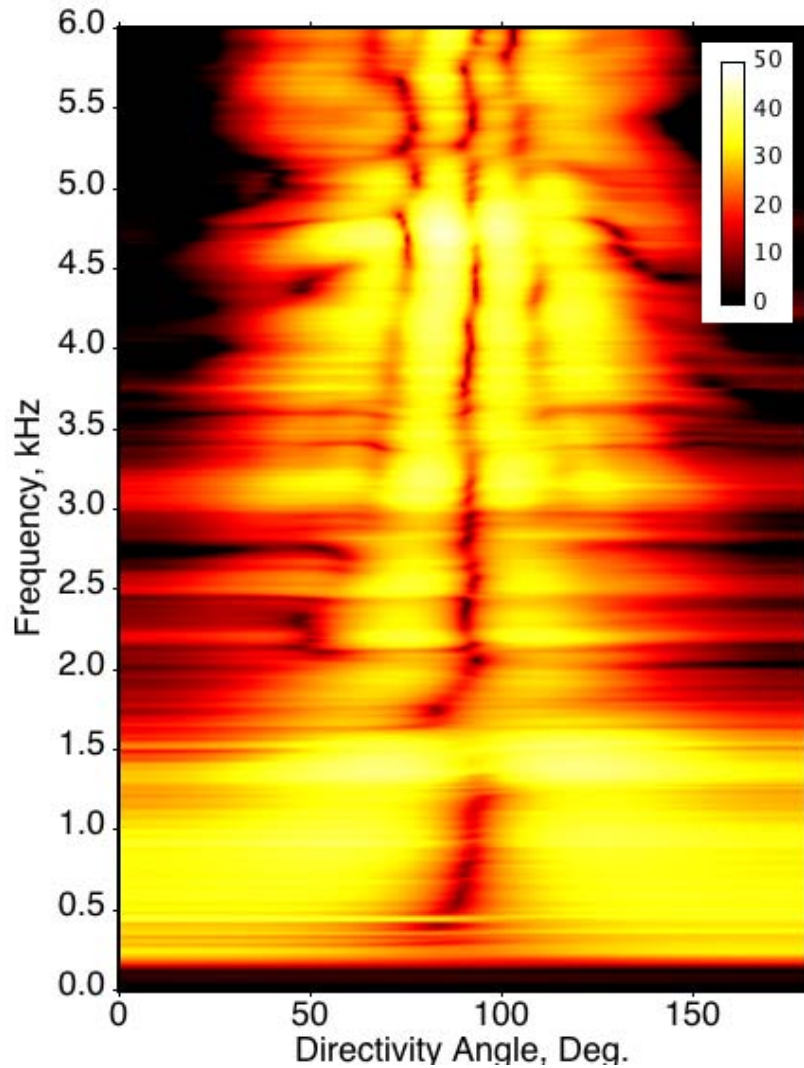
GINV



Acoustic holography data
used to synthesize far field
acoustic pressure that would
have been measured in an
ideal, anechoic environment

Radiation Pattern Synthesized from GINV Model

Far field, anechoic, data derived from nearfield, non-anechoic test



Narrowband SPL (11.8 Hz)
at 10 m, dB Re. 20 μ Pa.
Horizontal plane.

