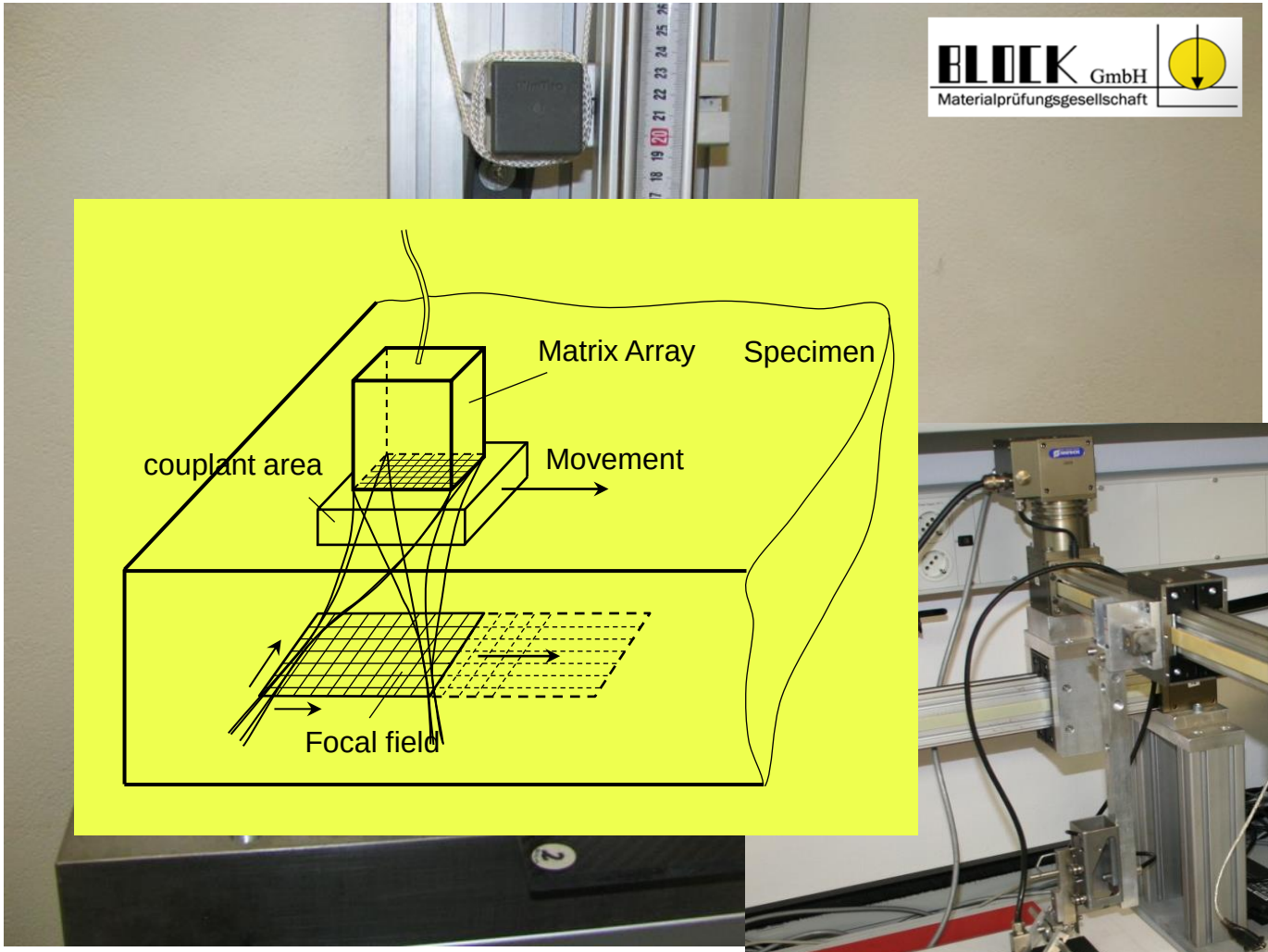
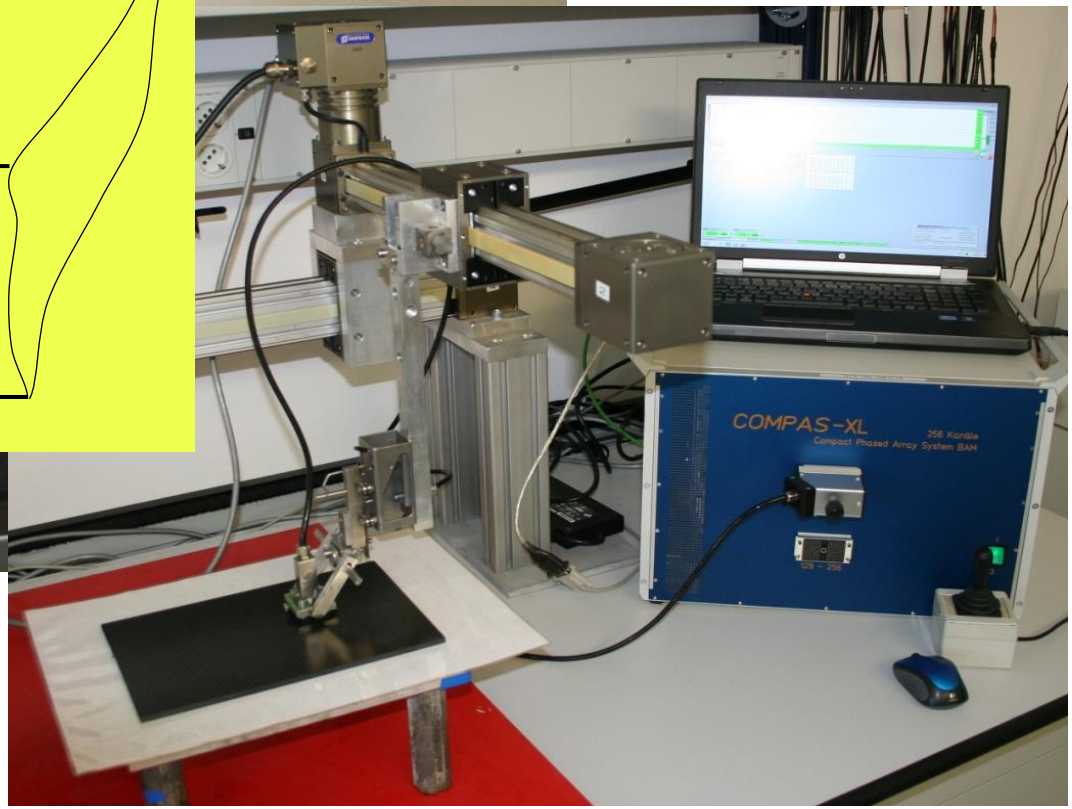
***V*alidated *I*nspection *T*echniques for *C*omposites in *E*nergy *A*pplications**

VITCEA

Inspection technique: Ultrasound

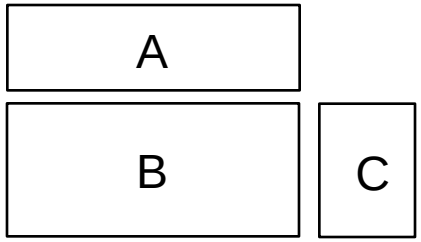

Matrix Array
Specimen
couplant area
Movement
Focal field

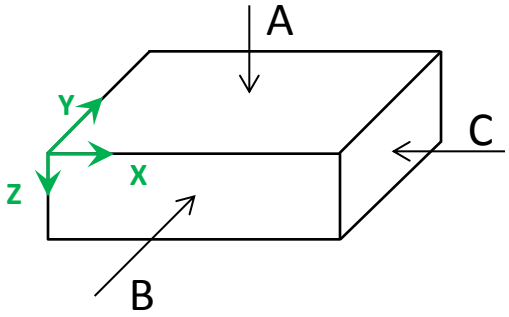

COMPAS-XL

Matrix Array , 60 elements (6 by 10)

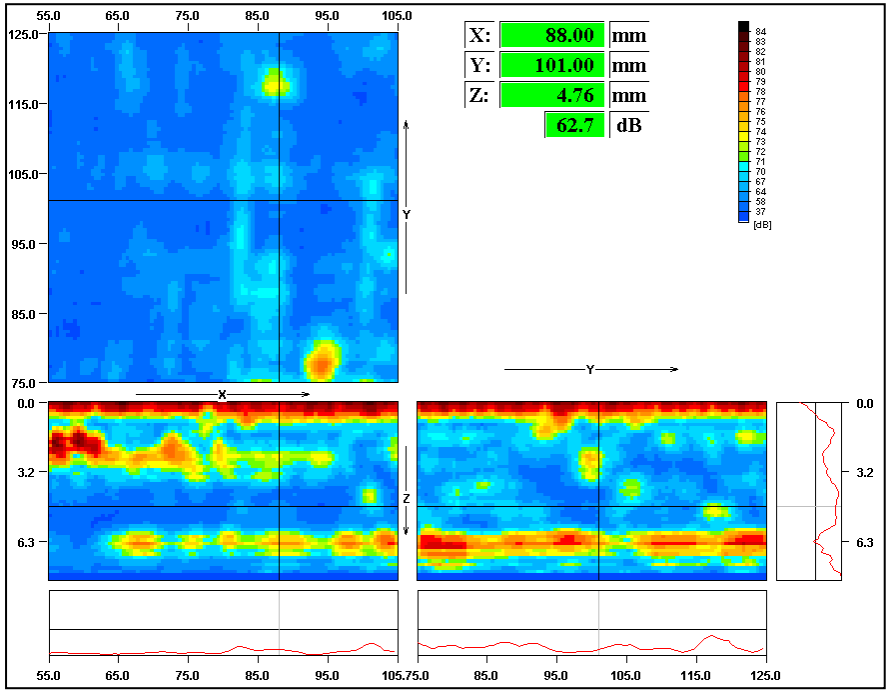
thickness of CPRF specimen: 6 mm

height of impact h = 1,1 m

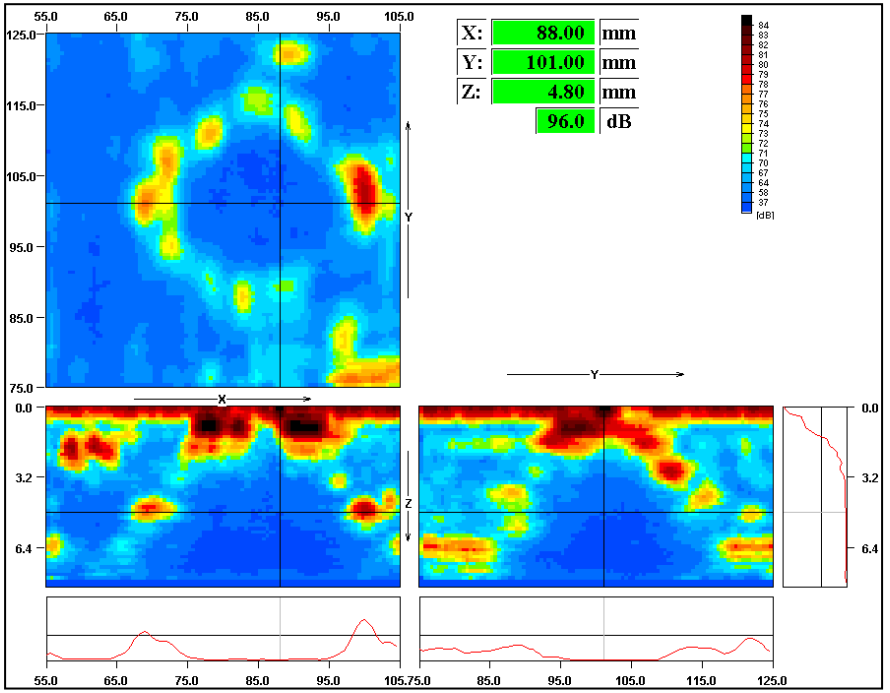




unidirectional fiber orientation



C- an B-Scan ***before*** impact occured



C- an B-Scan ***after*** impact occured

Matrix Array , 60 elements (6 by 10)

thickness of CPRF specimen: 6 mm

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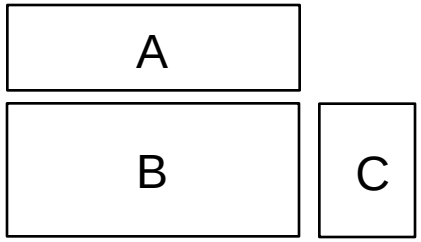
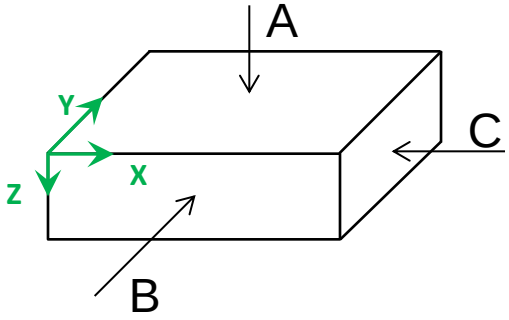
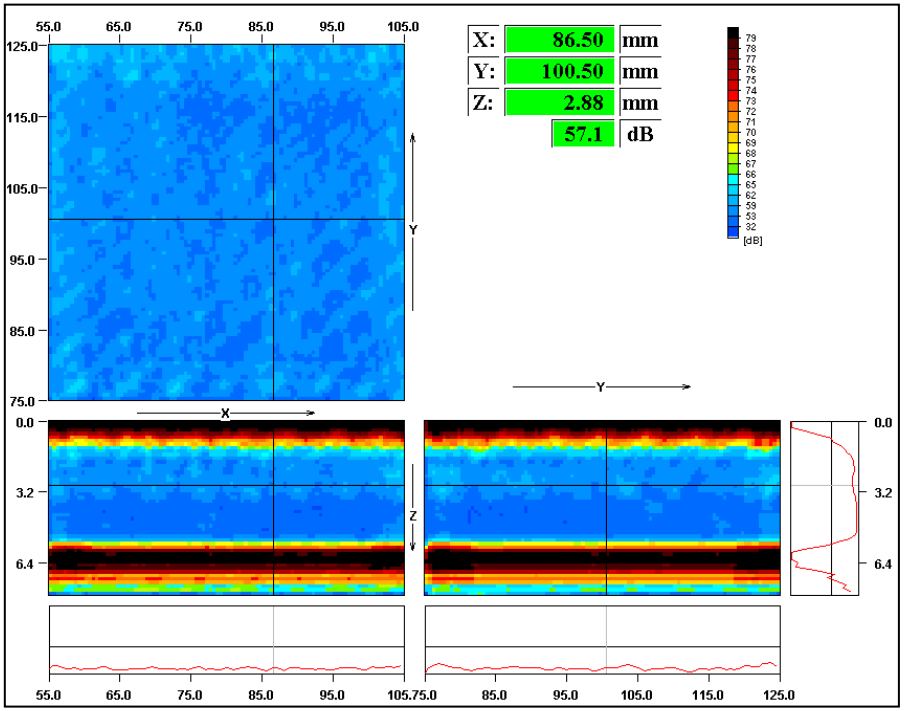
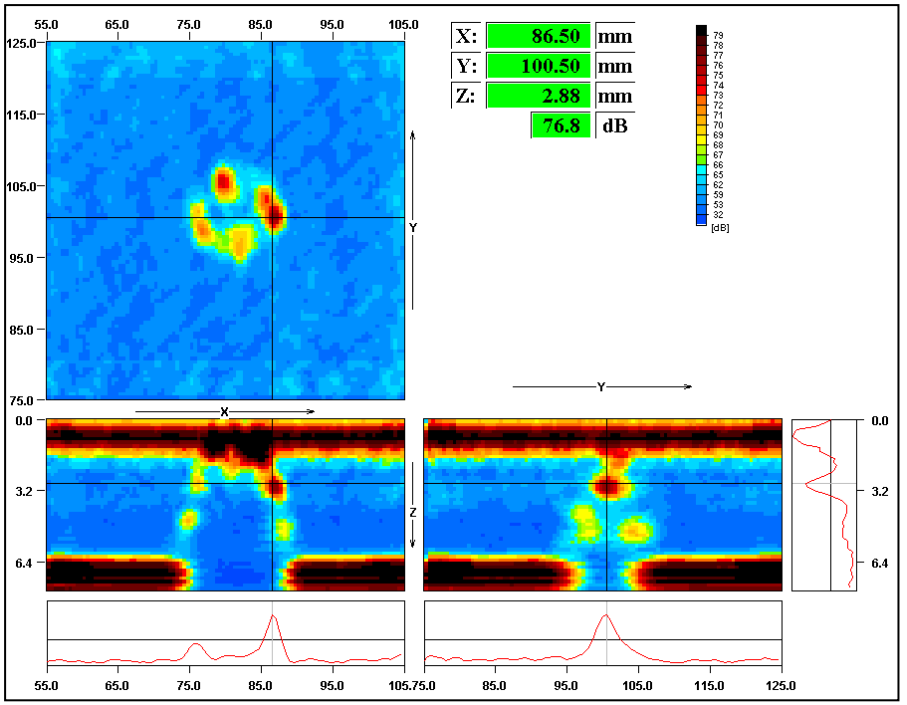




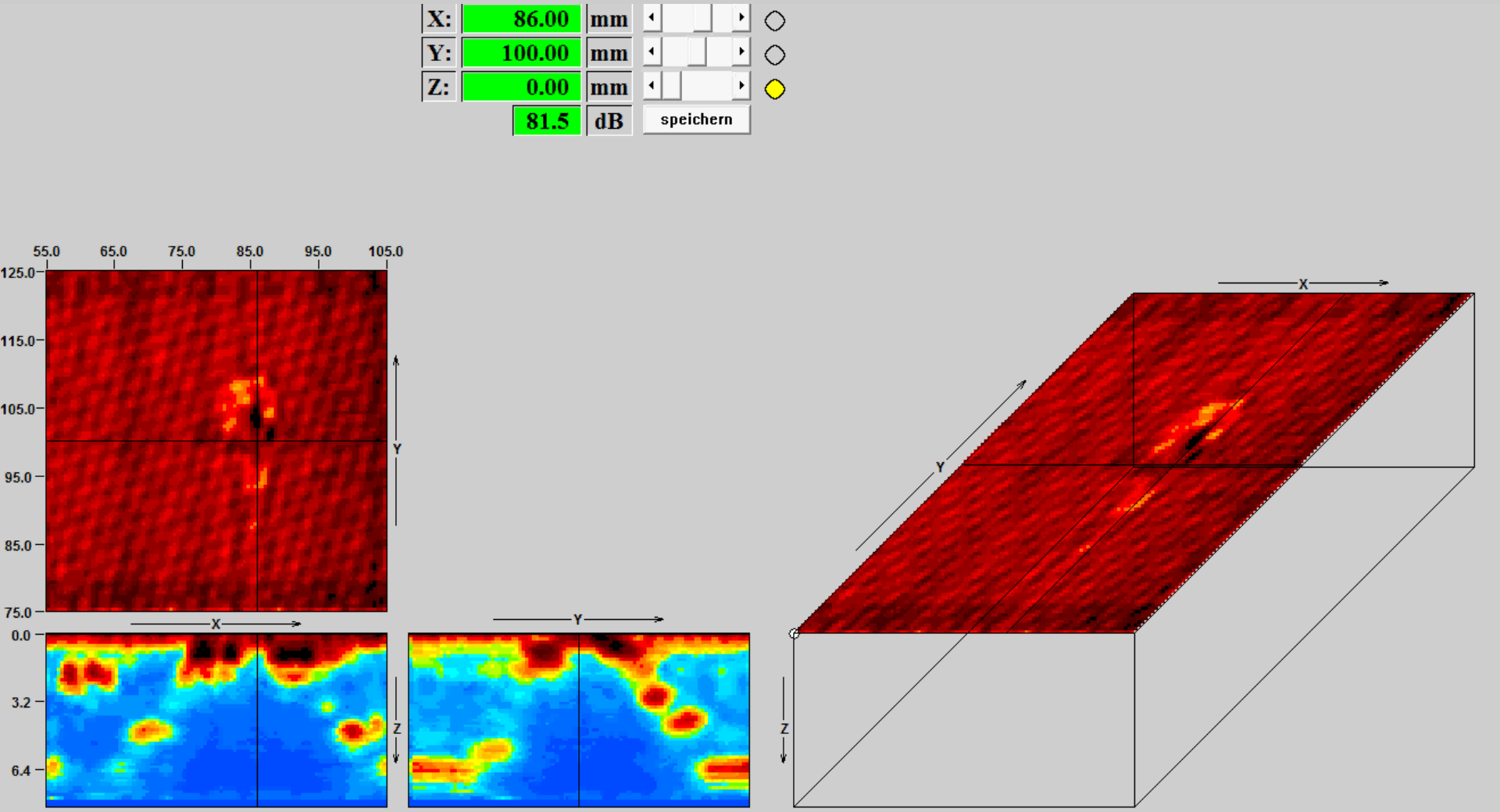
bidirectional fiber orientation

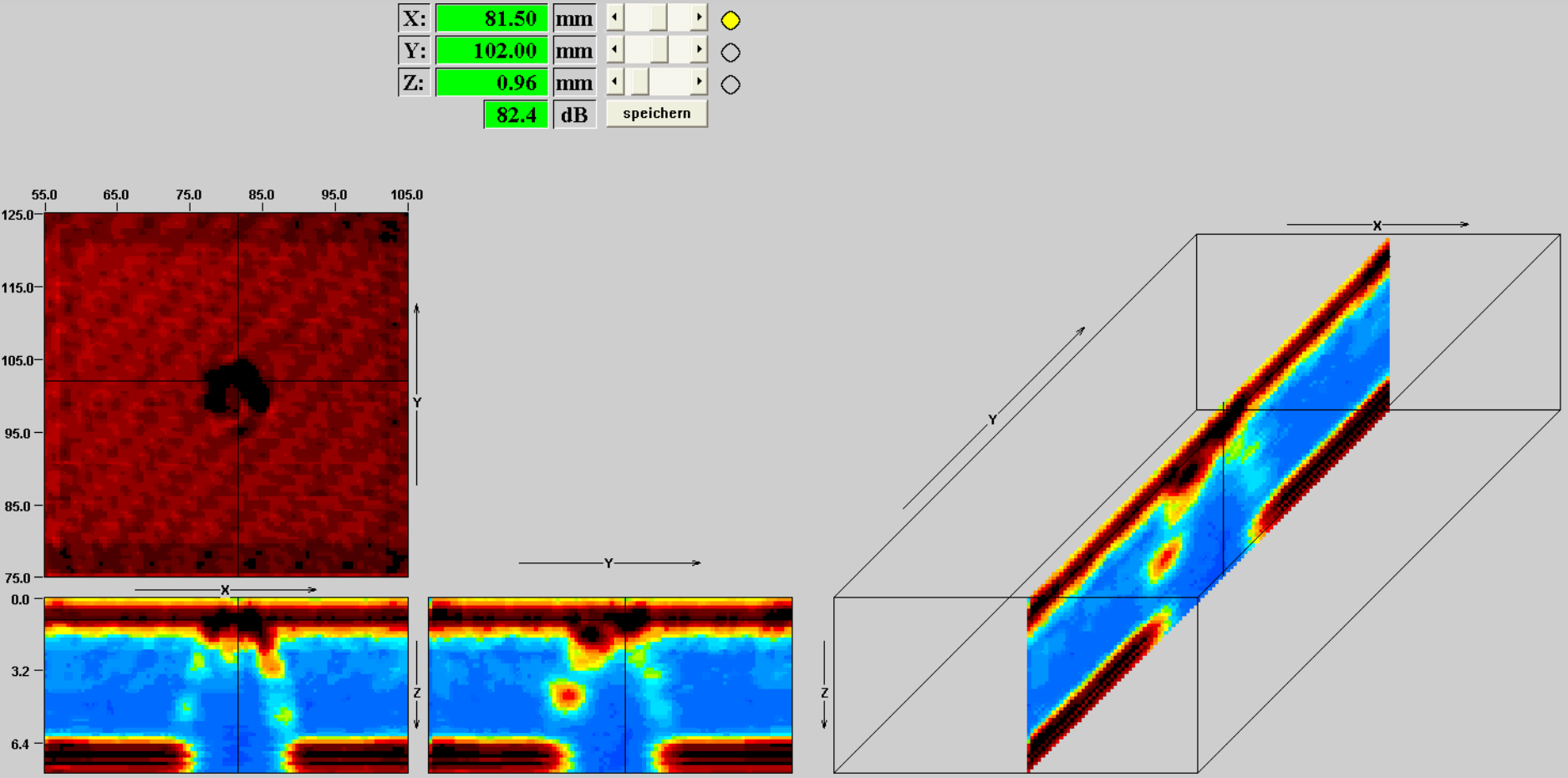


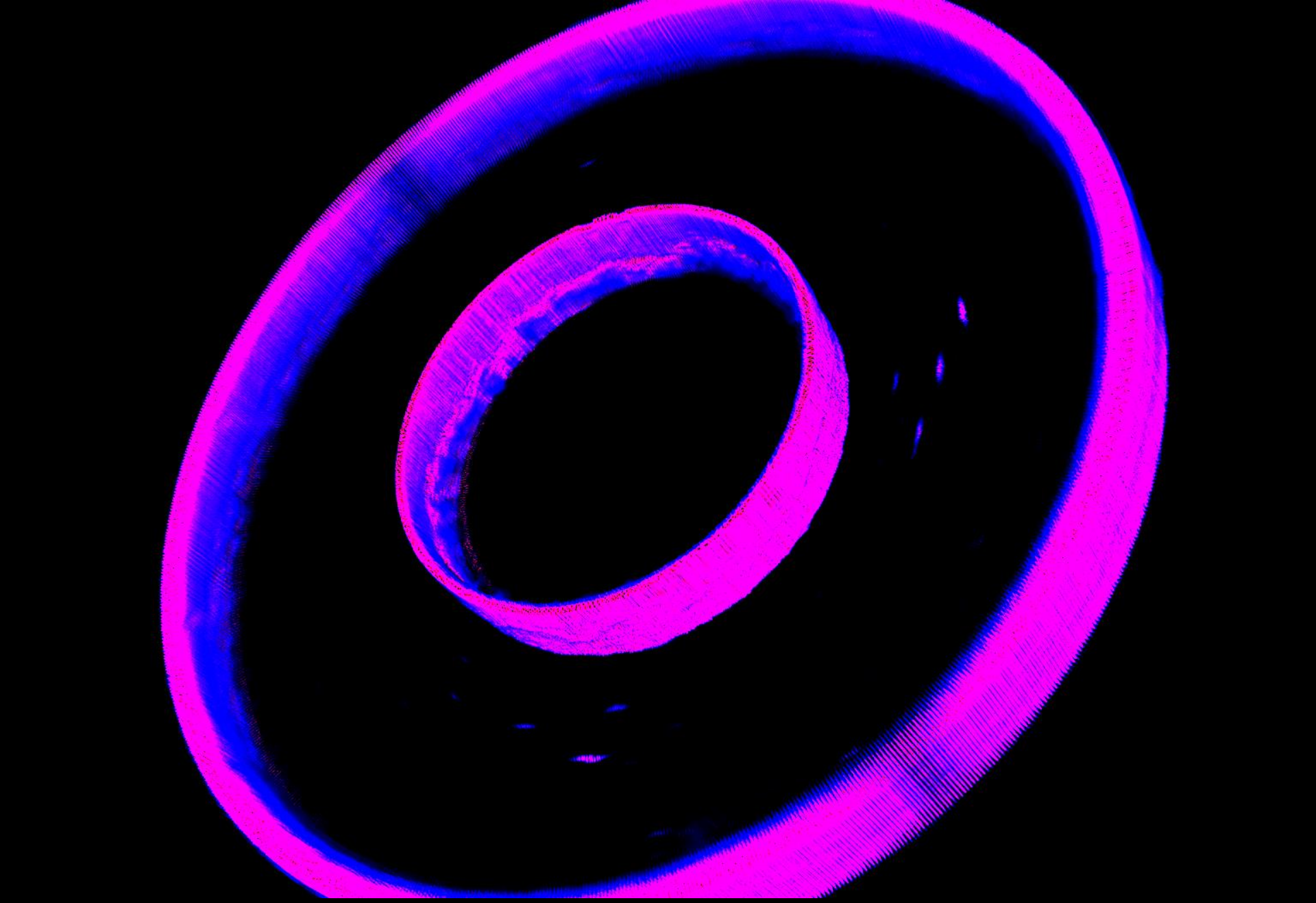
C- an B-Scan ***before*** impact occured



C- an B-Scan ***after*** impact occured

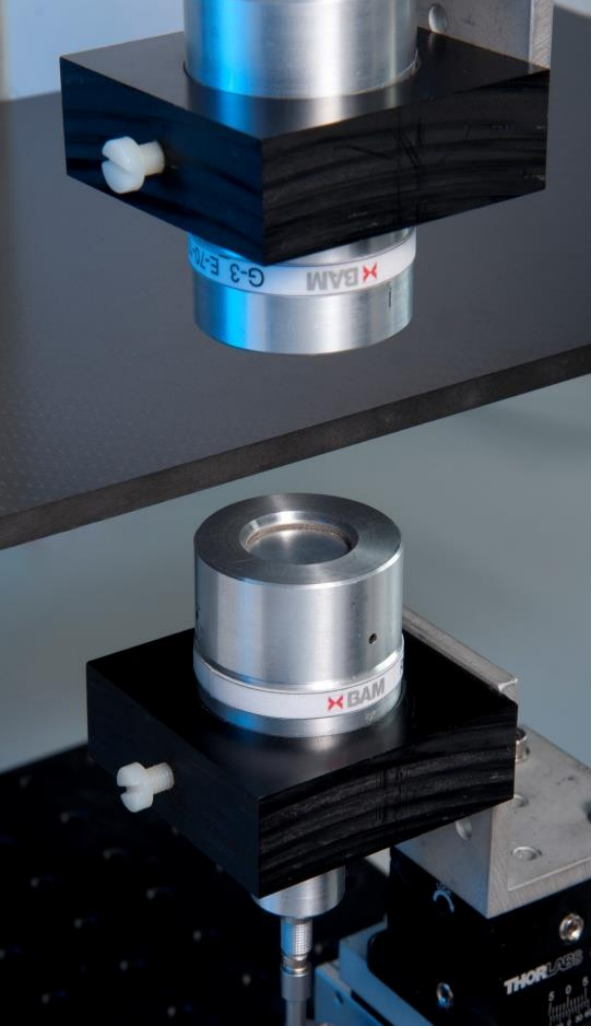

X: 86.00 mm
Y: 100.00 mm
Z: 0.00 mm
81.5 dB
speichern
55.0
65.0
75.0
85.0
95.0
105.0
125.0
115.0
105.0
95.0
85.0
75.0
Y
X
0.0
3.2
6.4
Z
Y
X
Y
Z


X: 81.50 mm
Y: 102.00 mm
Z: 0.96 mm
82.4 dB
speichern
55.0
65.0
75.0
85.0
95.0
105.0
125.0
115.0
105.0
95.0
85.0
75.0
0.0
3.2
6.4
X
Y
Z



BAM

Immersion Tank – High Resolution Ultrasonic Inspection



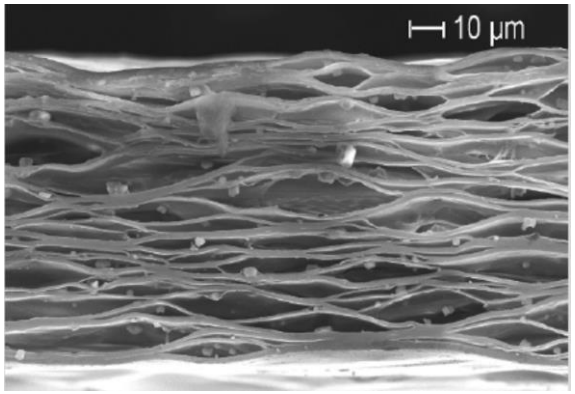
Air-coupled probes

- based on cellular polypropylene
- thermoacoustical emitters

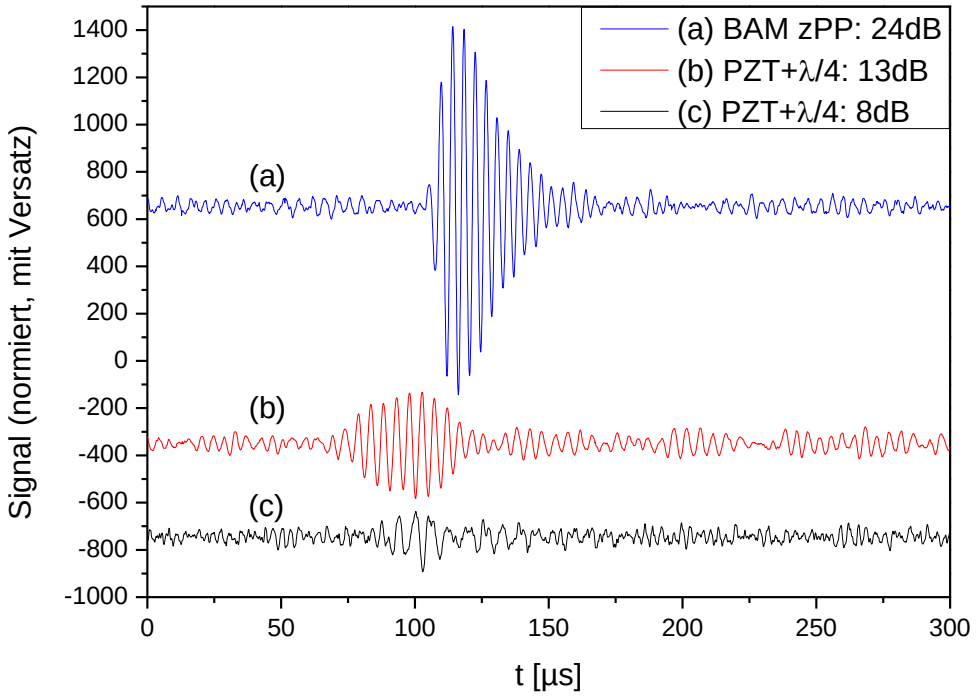
Contact: M. Gaal
Colleagues: A. Harrer, M. Daschewski, E. Dohse, J. Bartusch

Air-coupled probes for NDT

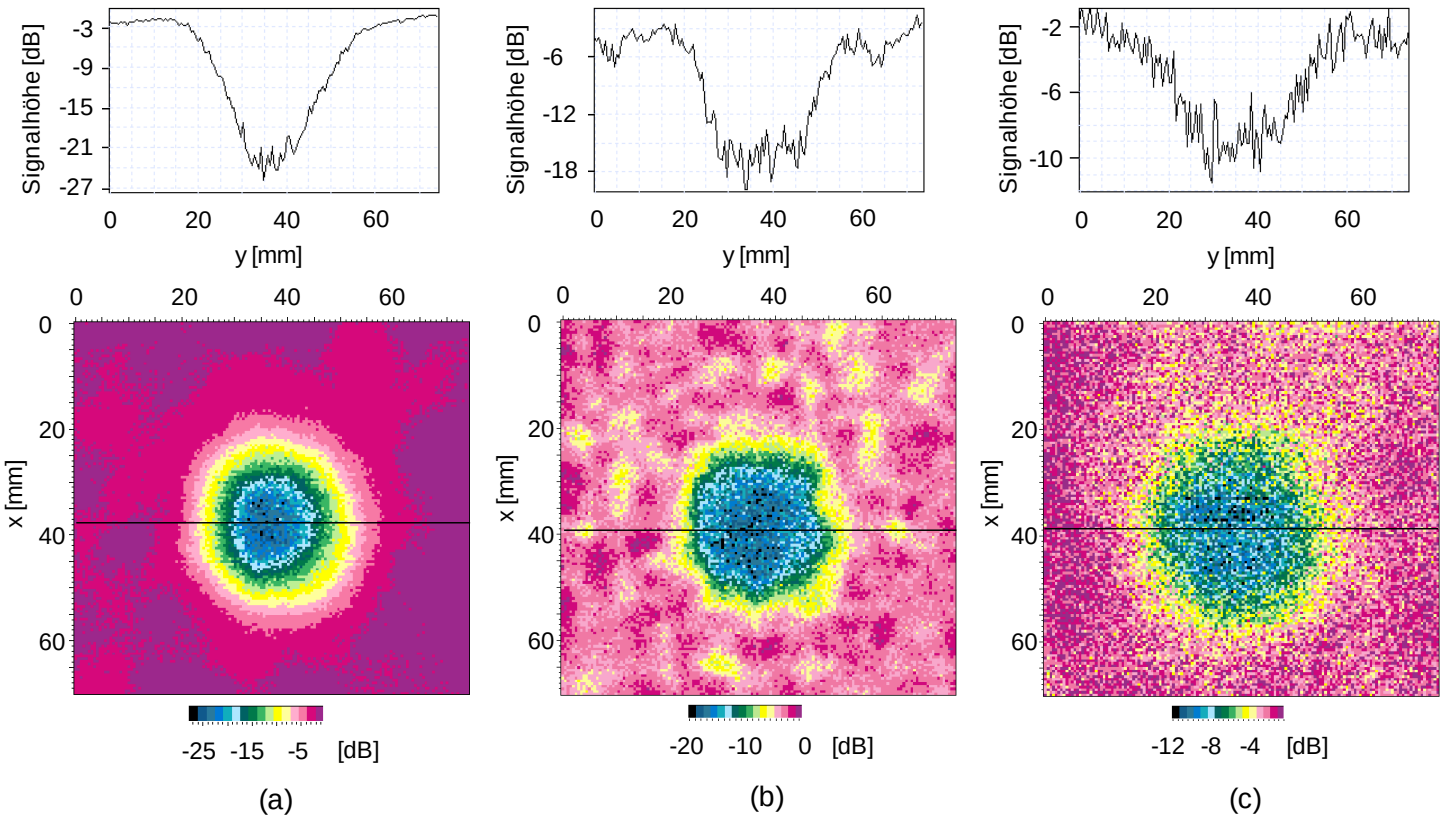
cellular polypropylene



transmission of 3 mm aluminium:

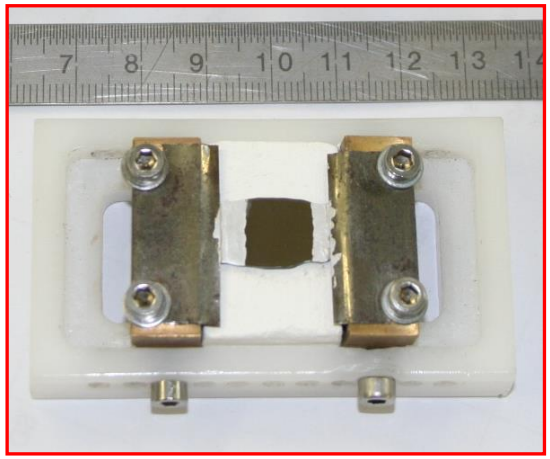


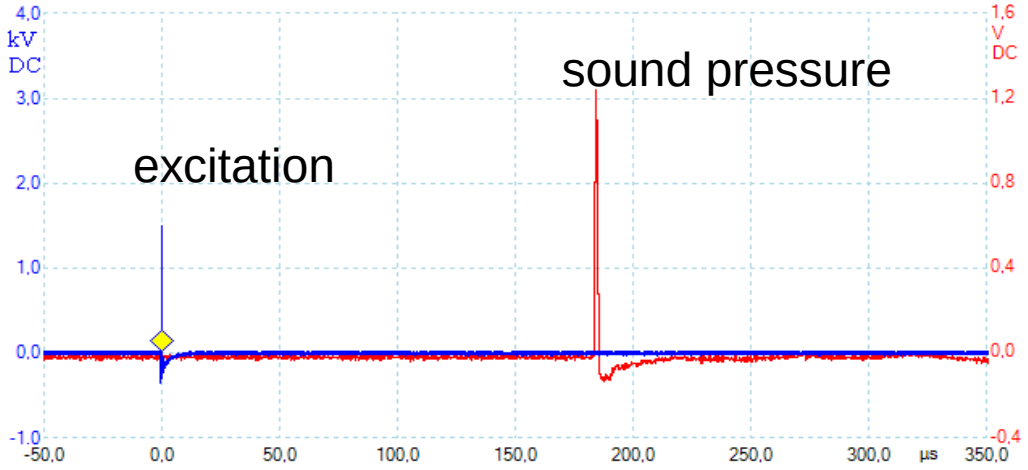
Sandwich CFRP – honeycomb – CFRP



Thermoacoustical transmitters

- 30-50 nm titanium layers on glass
- extremely large bandwidth





Thank You for Your Attention