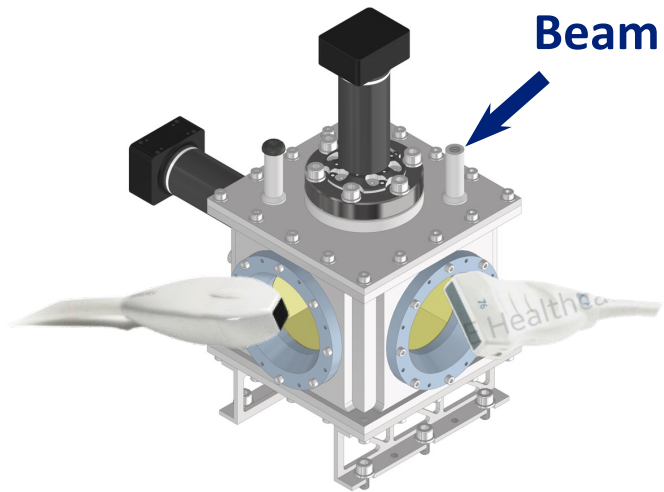
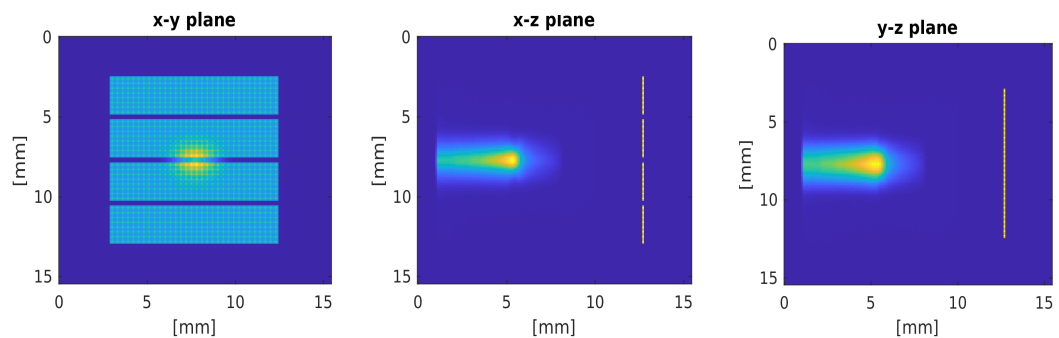


Ionacoustics Meeting

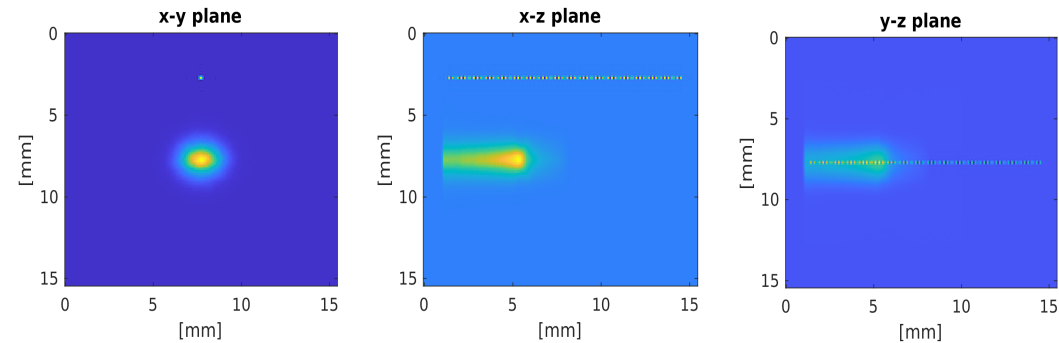
4/4/2024



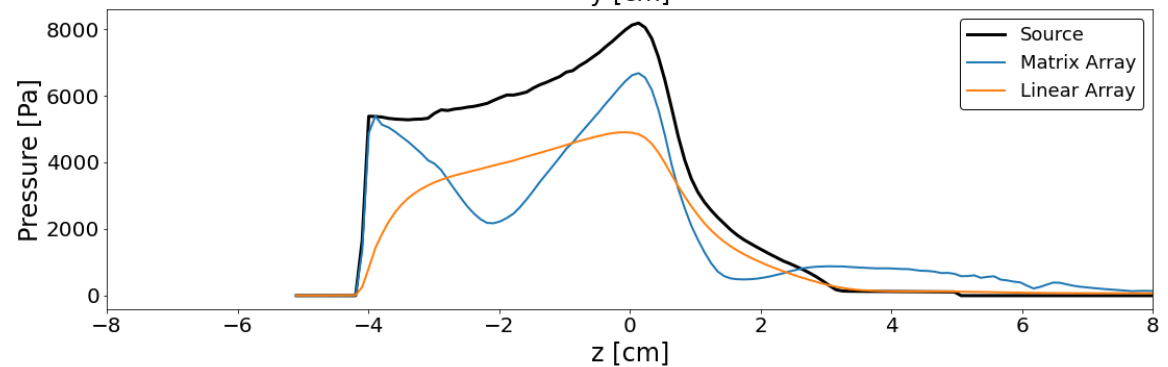
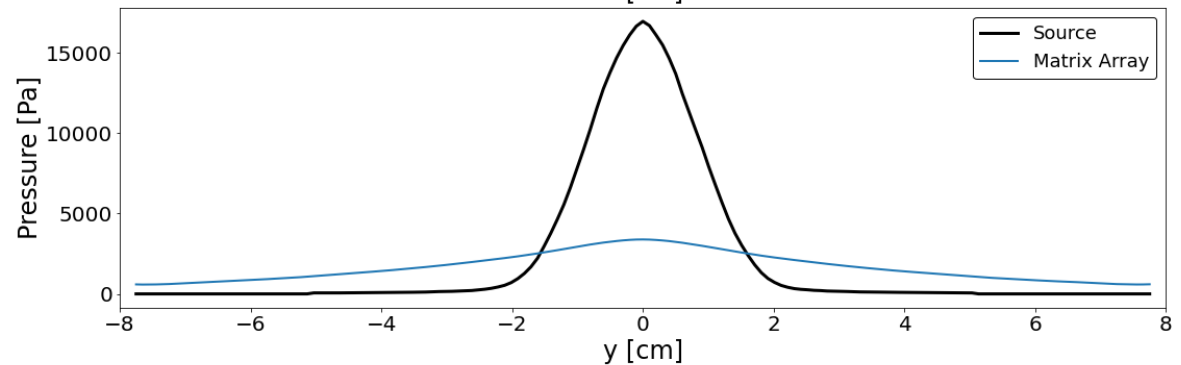
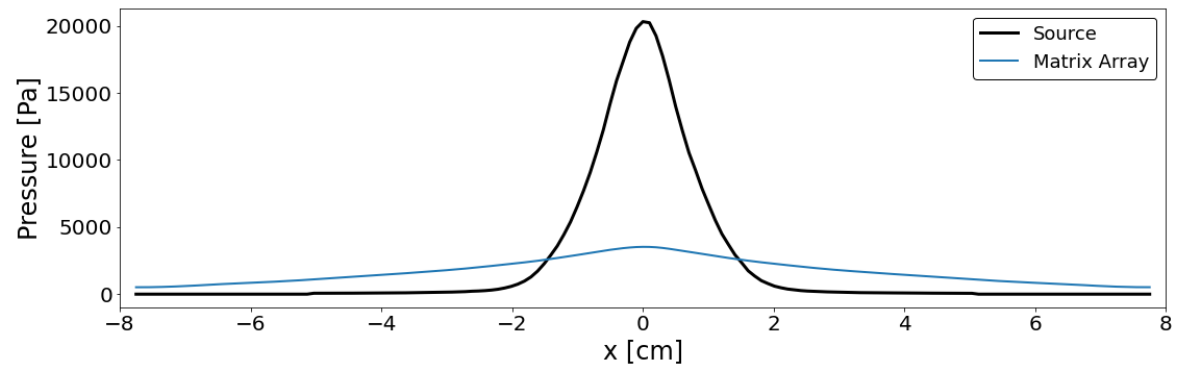
Matrix array



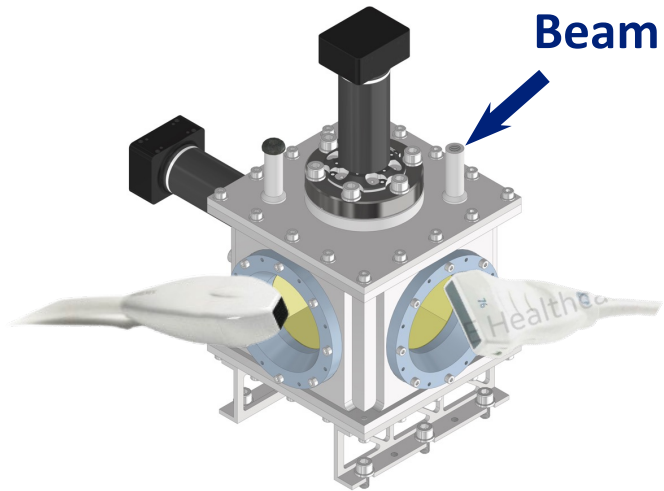
Linear array



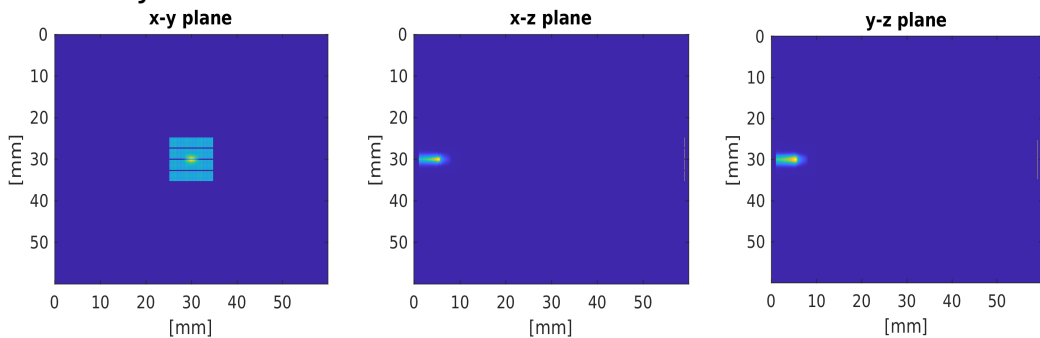
Time-reversal Reconstruction



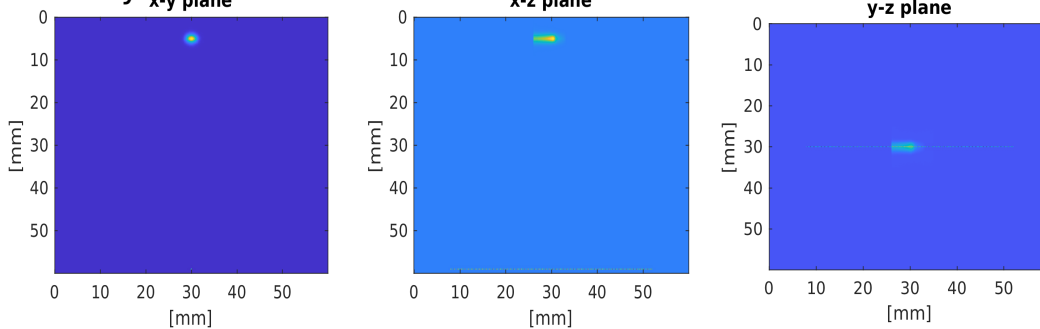
Frequency response ❌



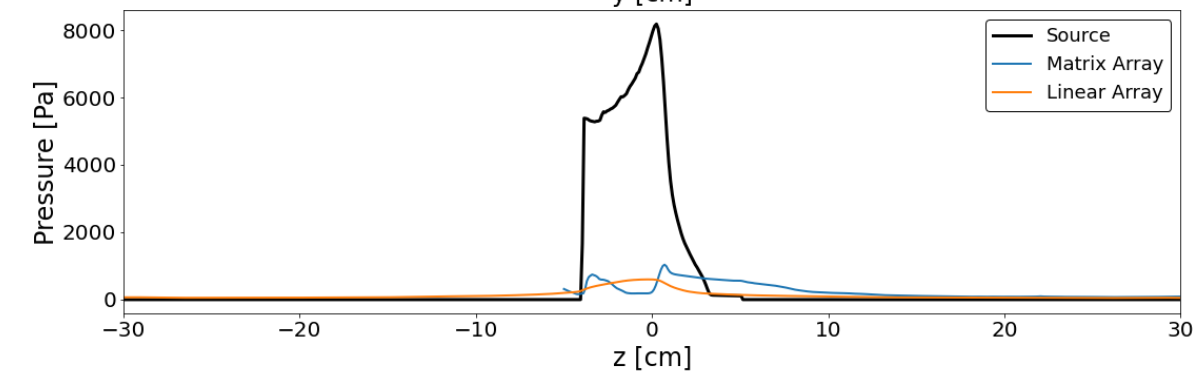
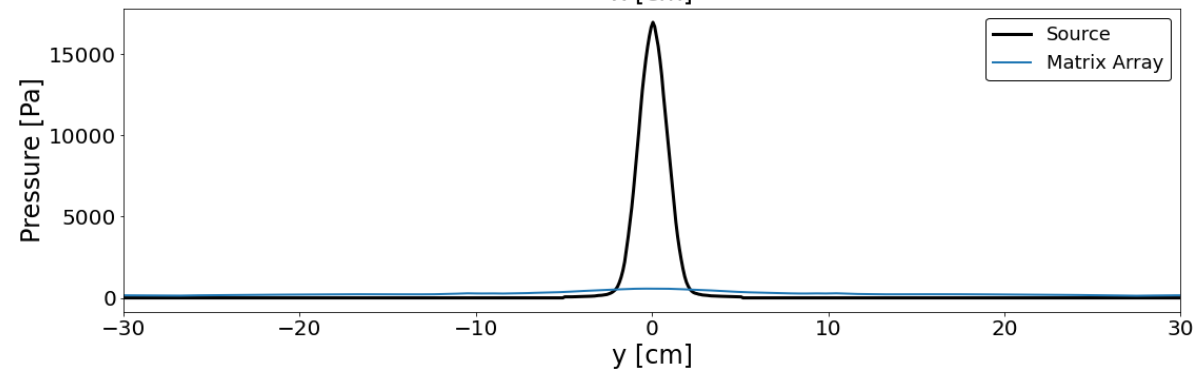
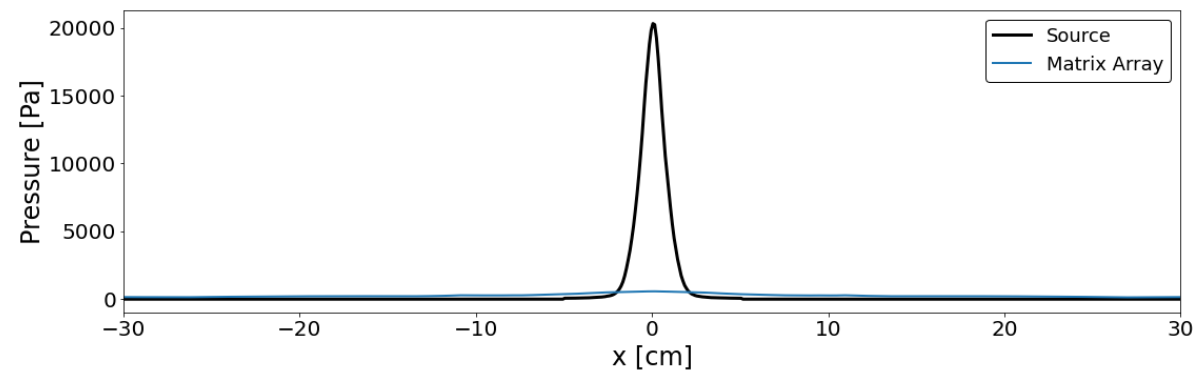
Matrix array



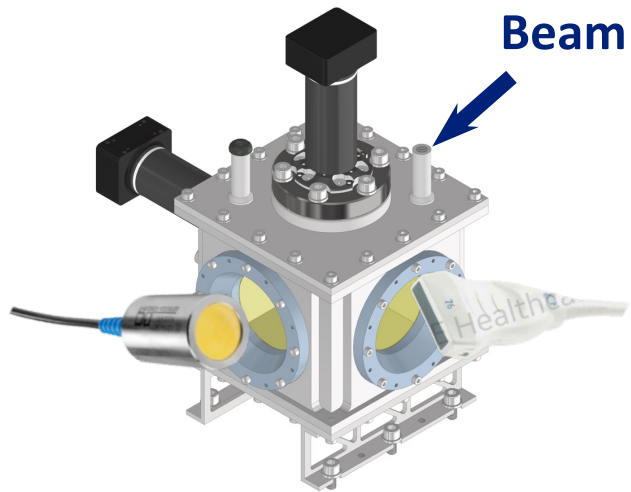
Linear array



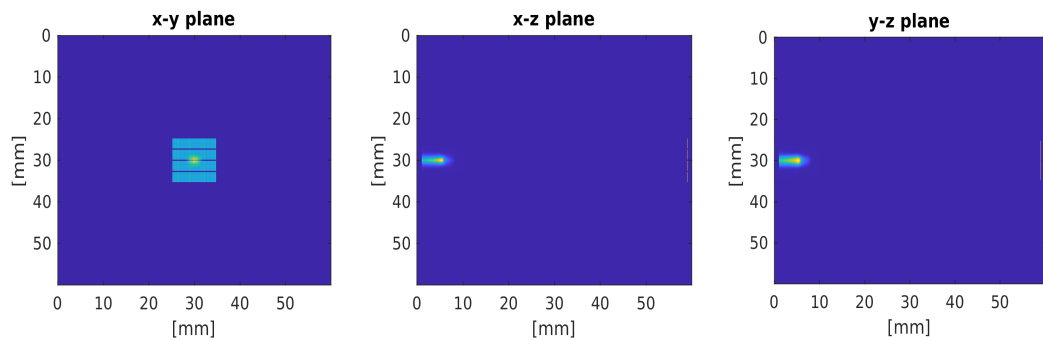
Time-reversal Reconstruction



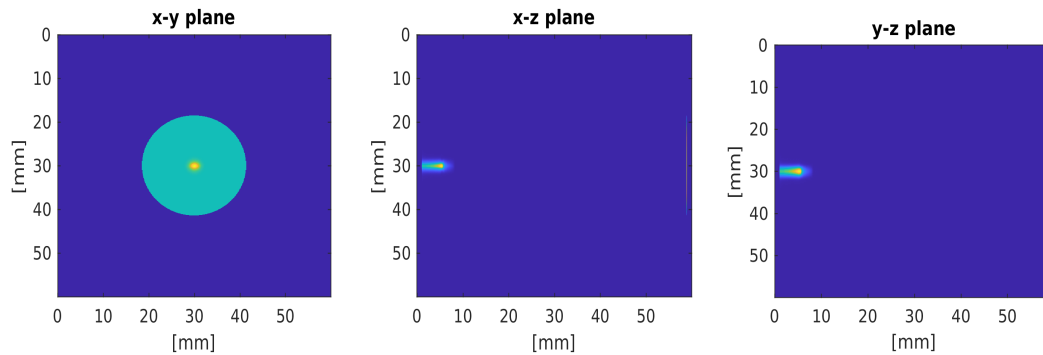
Frequency response ❌



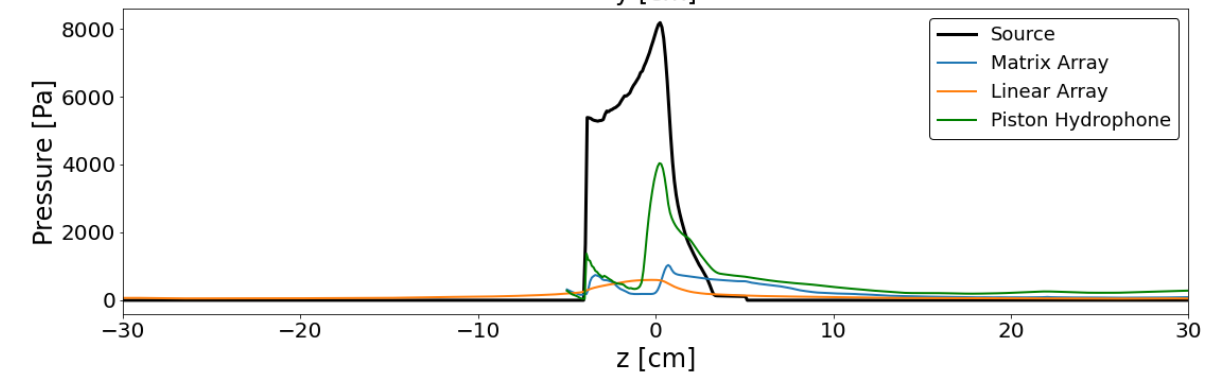
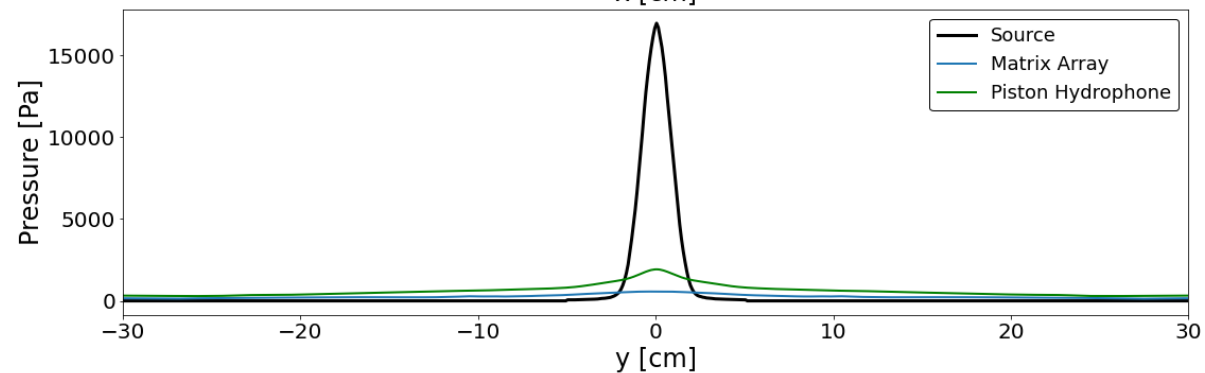
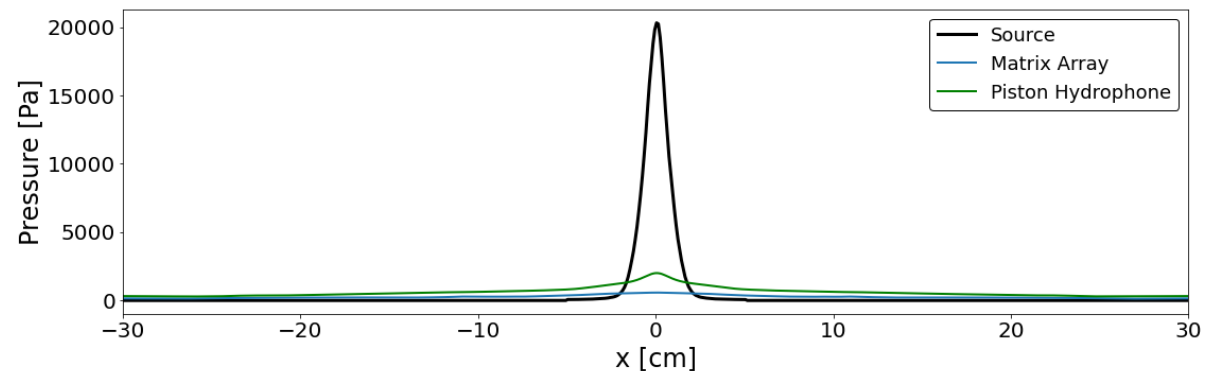
Matrix array



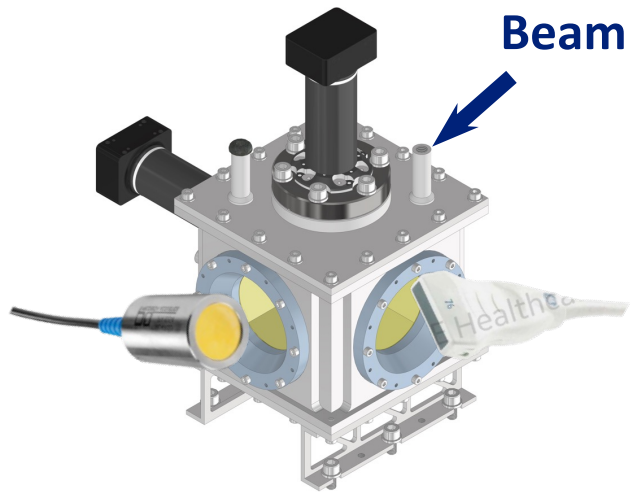
Piston hydrophone



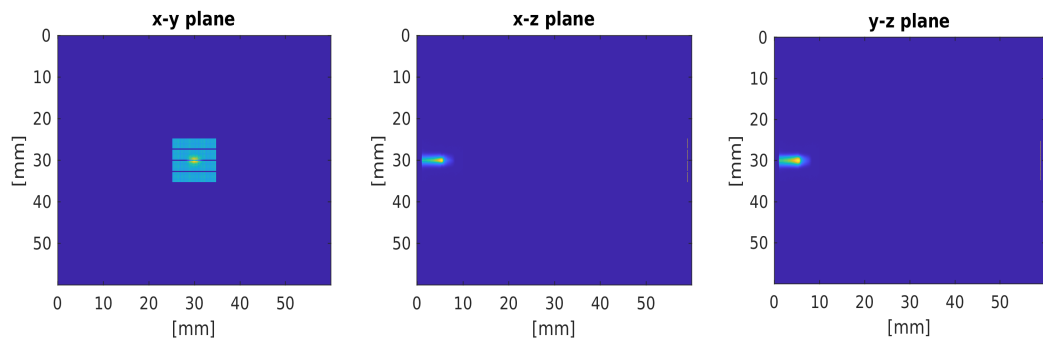
Time-reversal Reconstruction



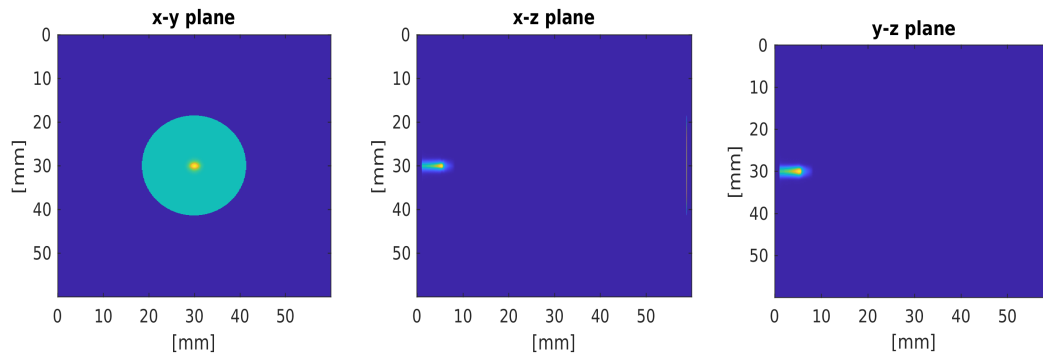
Frequency response ❌



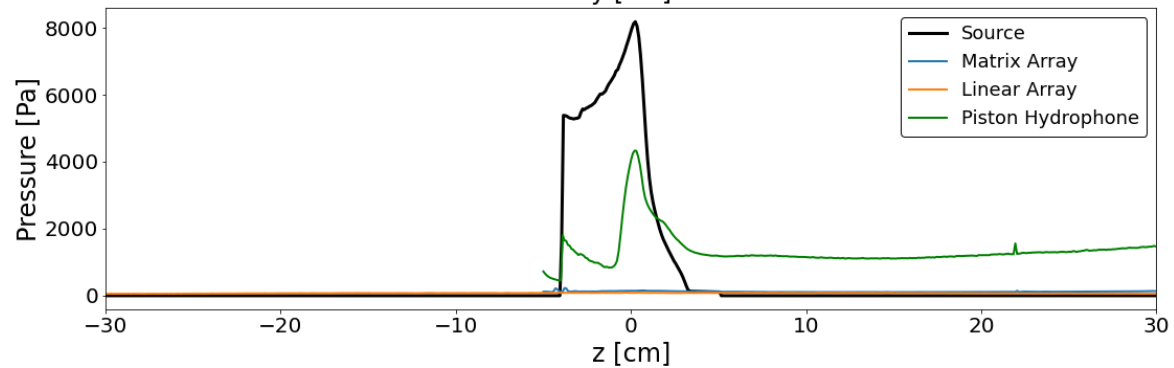
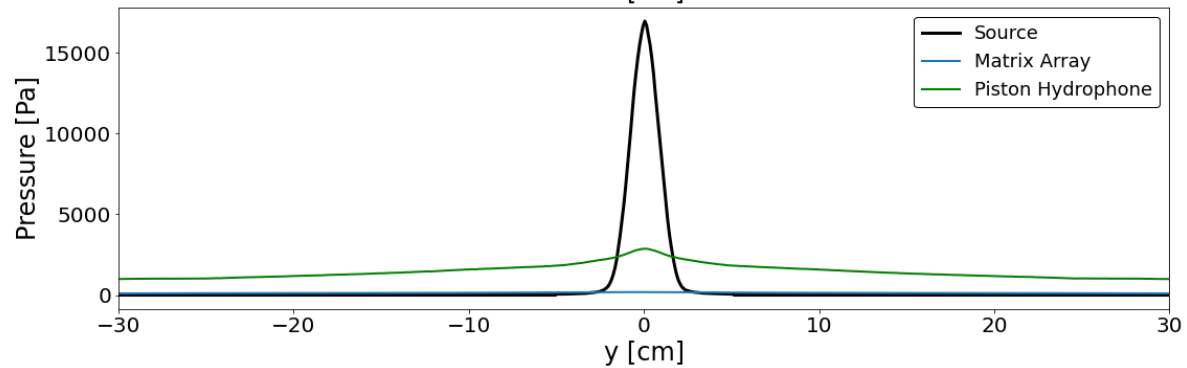
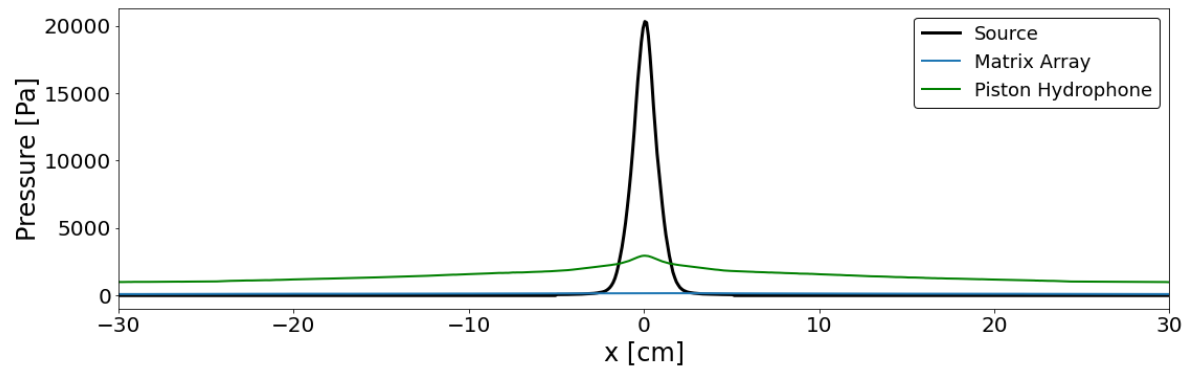
Matrix array



Piston hydrophone



Time-reversal Reconstruction



Frequency response ✓

Water- Aluminium boundary: 84% acoustic reflectivity

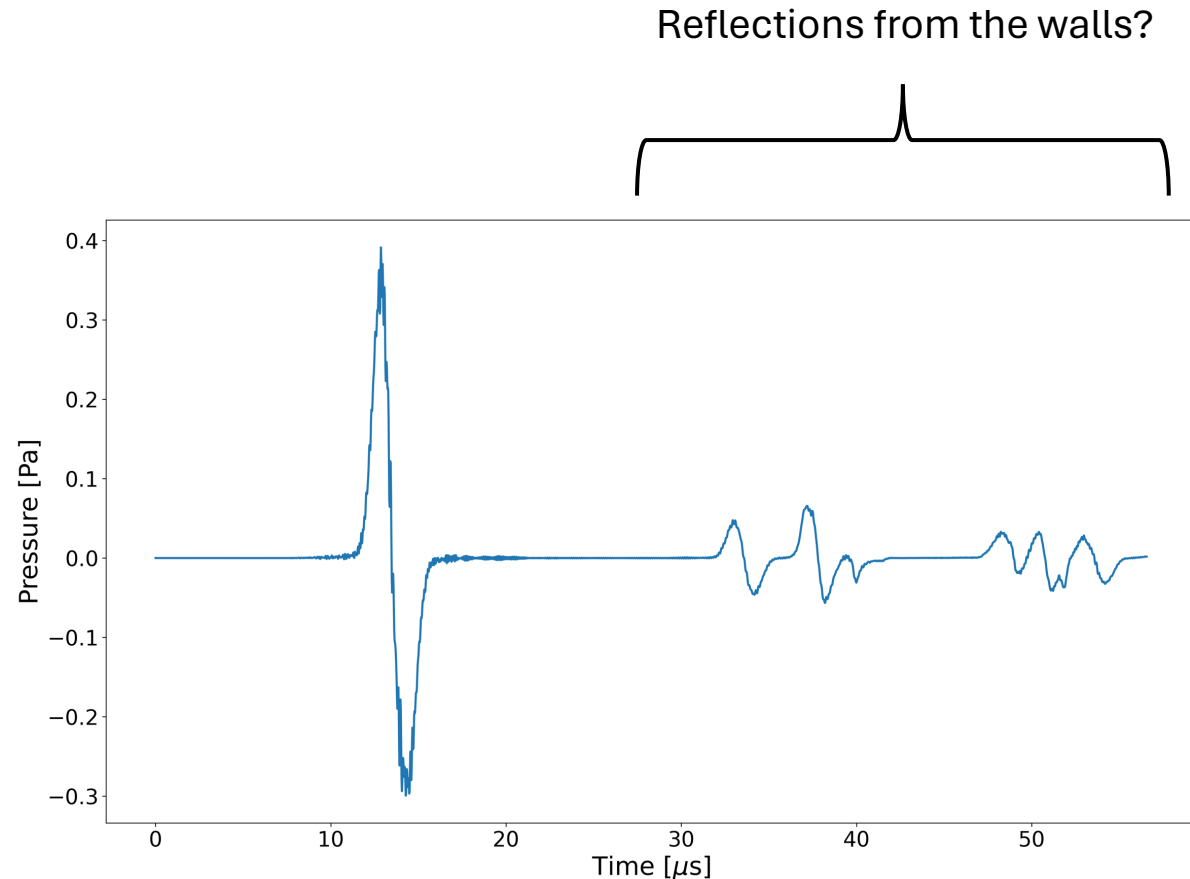
$$Z = \rho c$$

$$Z_{\text{water}} = 1.50 \times 10^6 \text{ Kg/m}^2\text{s}$$

$$Z_{\text{aluminium}} = 17.28 \times 10^6 \text{ Kg/m}^2\text{s}$$

$$R = \frac{Z_{\text{aluminium}} - Z_{\text{water}}}{Z_{\text{aluminium}} + Z_{\text{water}}}$$
$$= \frac{(17.28 - 1.50)}{(17.28 + 1.50)}$$
$$= 0.84$$

$$\text{PML_alpha} = 1 - 0.84;$$



Fully Absorptive Walls

PML_alpha = 1;

