

# Dielectric ChDR Buttons Cutoff-Test at CLEAR

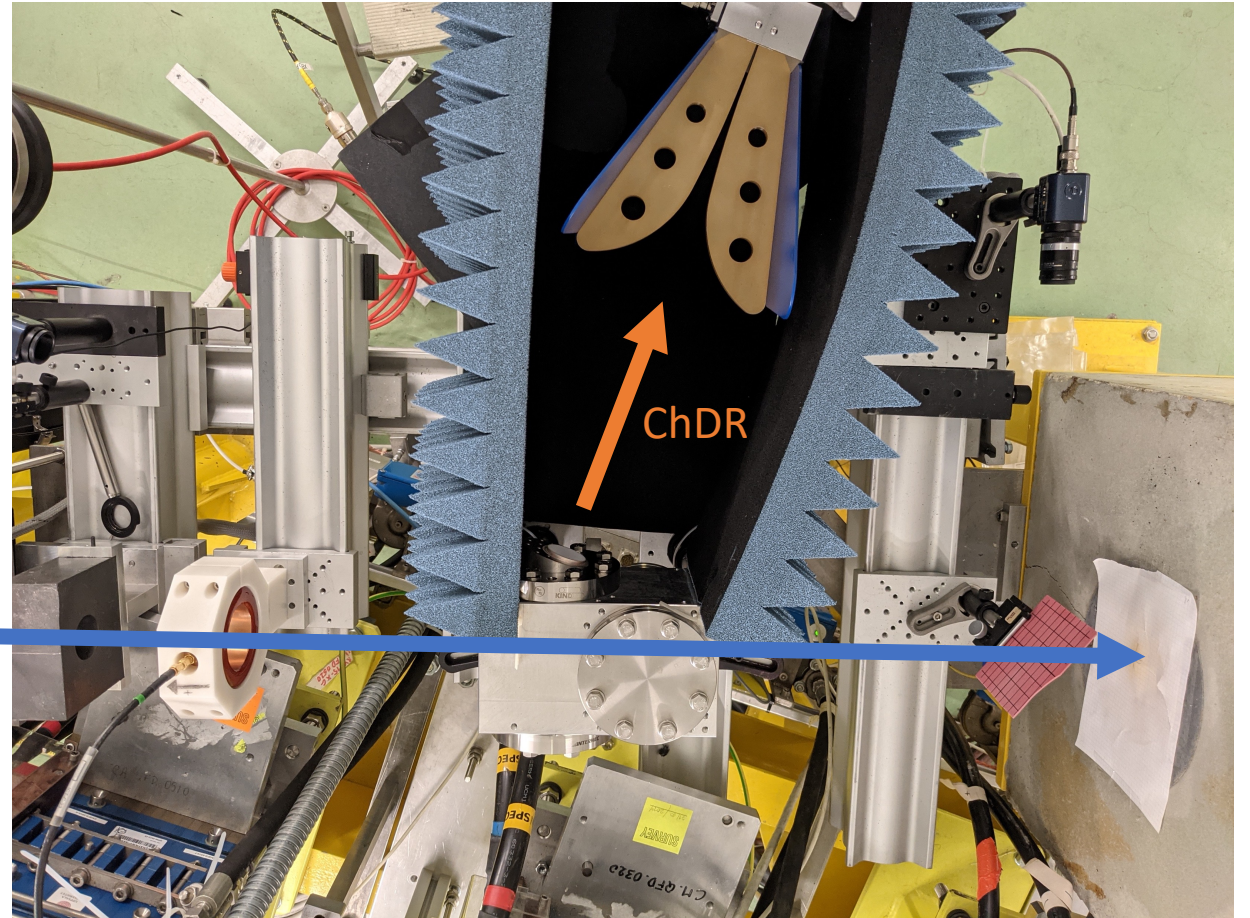
preliminary results, A. Schloegelhofer

5. July 2021

# First Setup

- Broadband Antenna (0.7 – 18 GHz)
- High signal levels → 30 dB attenuator at barrack

beam

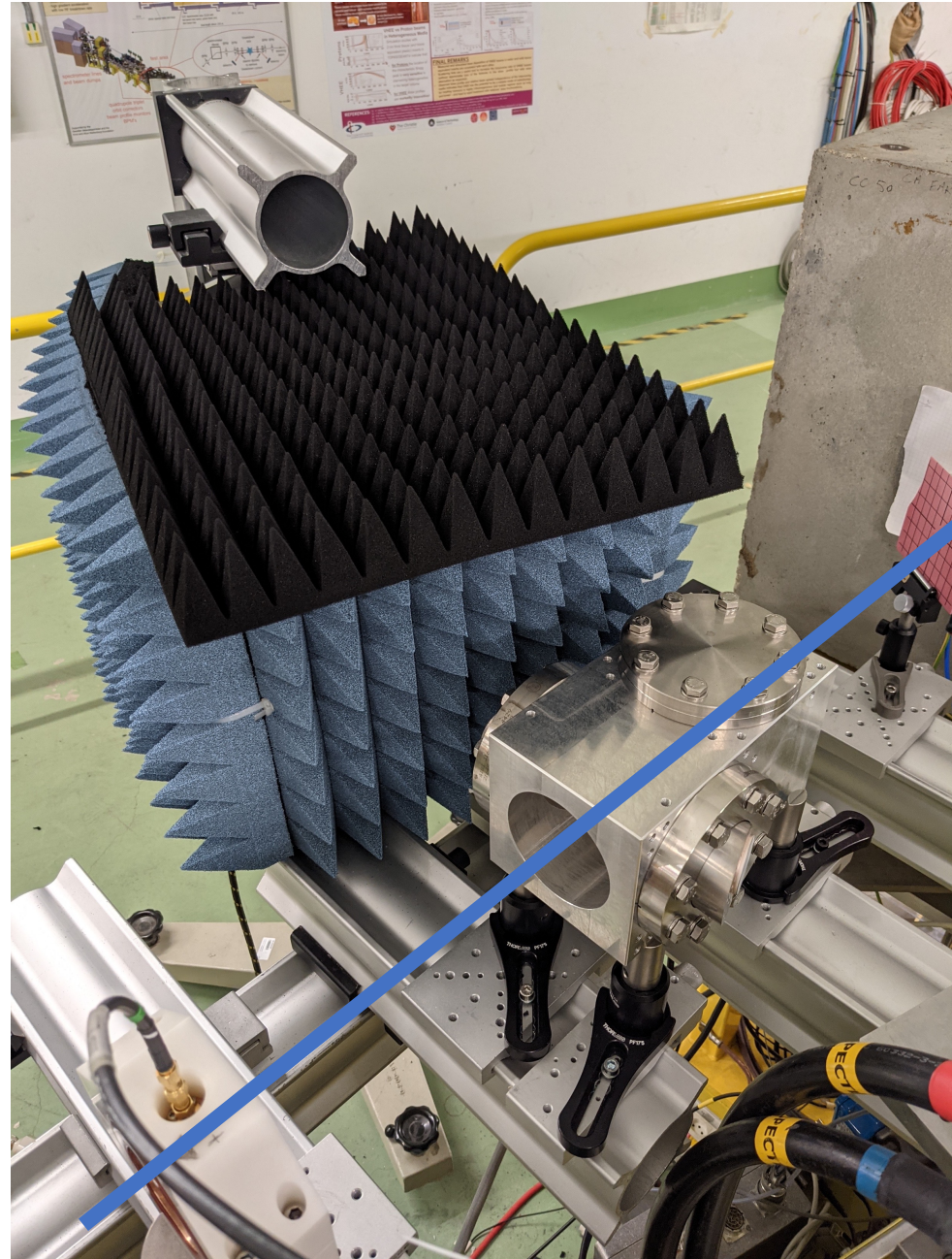


# Second Setup

- Add foam to avoid reflections  
→ only 10 dB attenuator at barrack

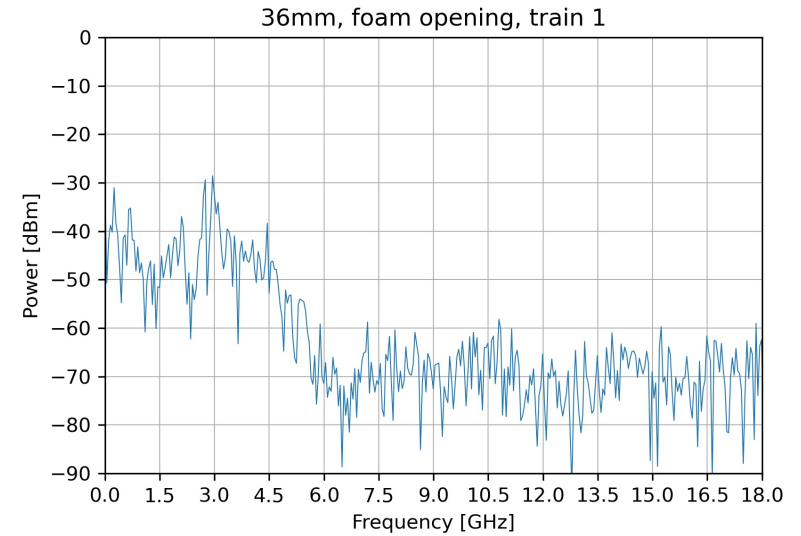
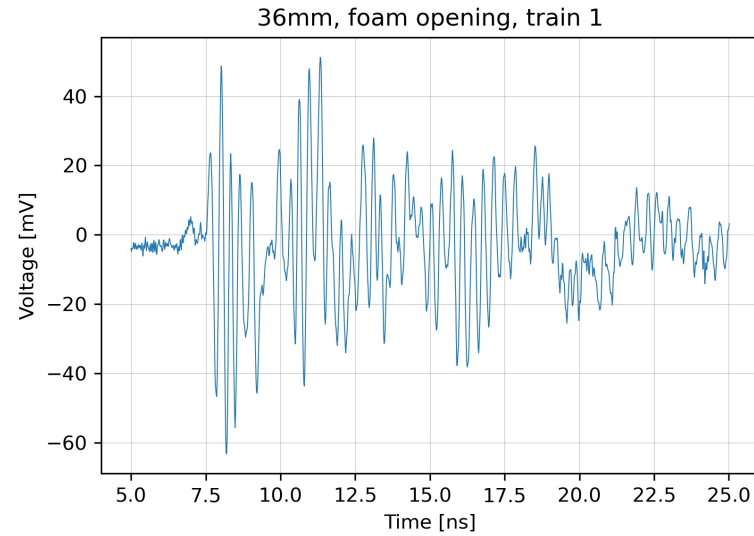
Beam related background level mistaken for signal, therefore attenuating signal and background  
→ Highly dominated by background

beam

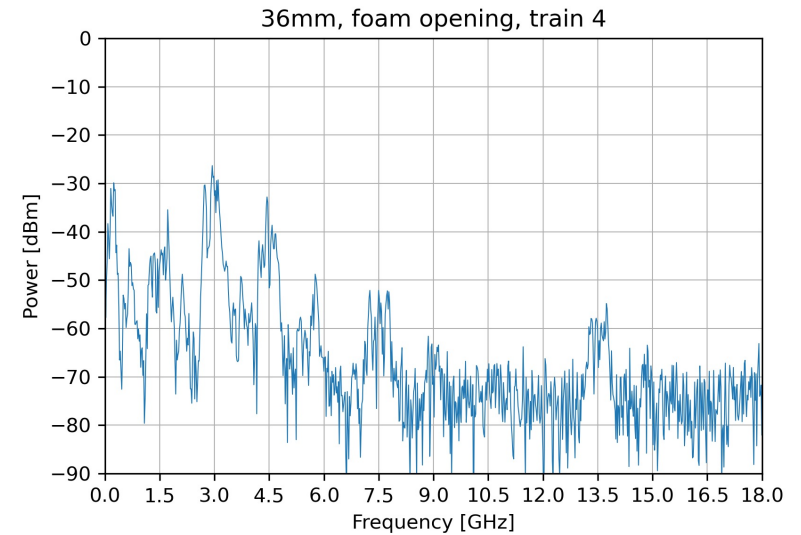
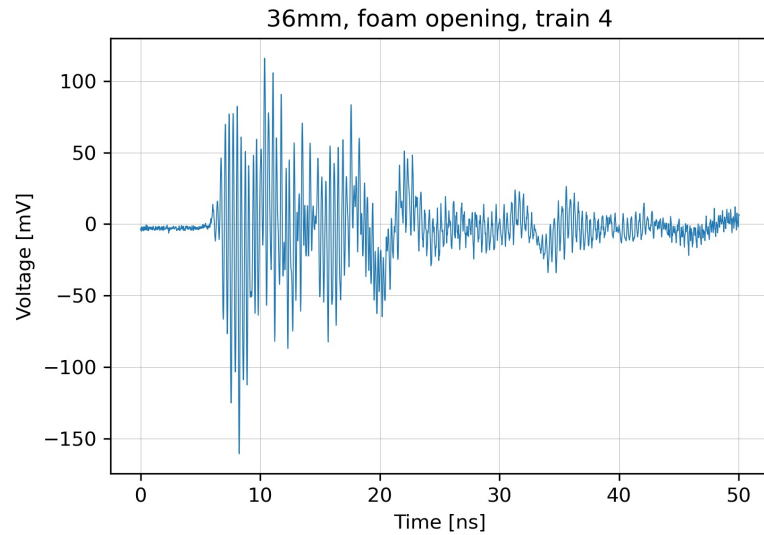


# Measure at harmonics

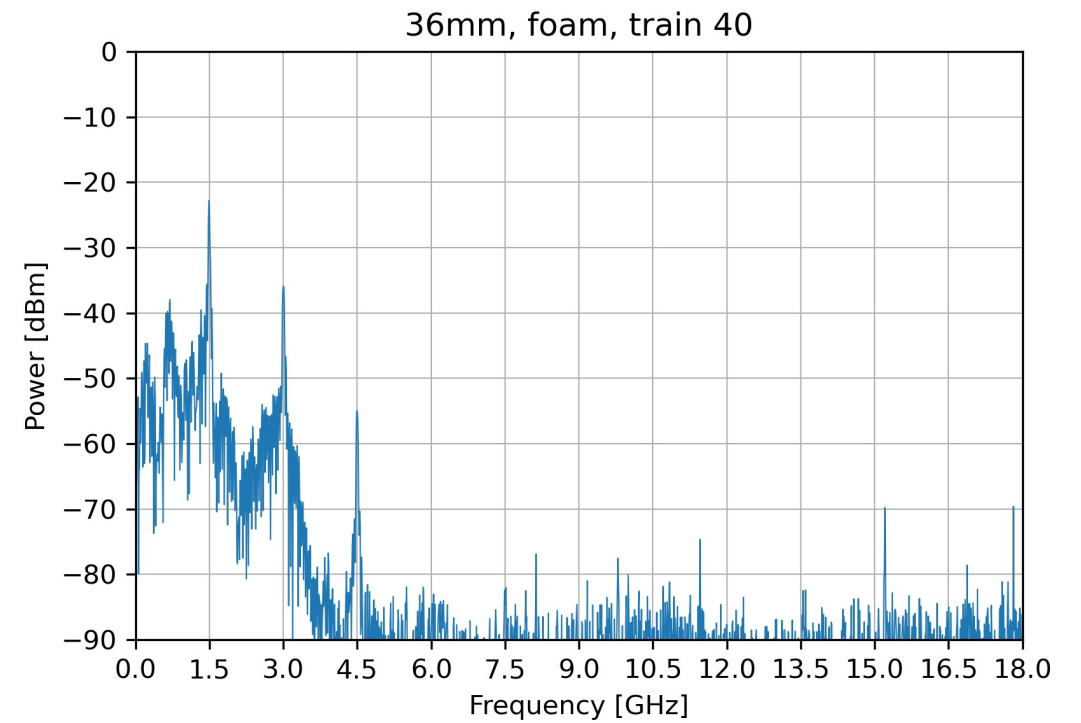
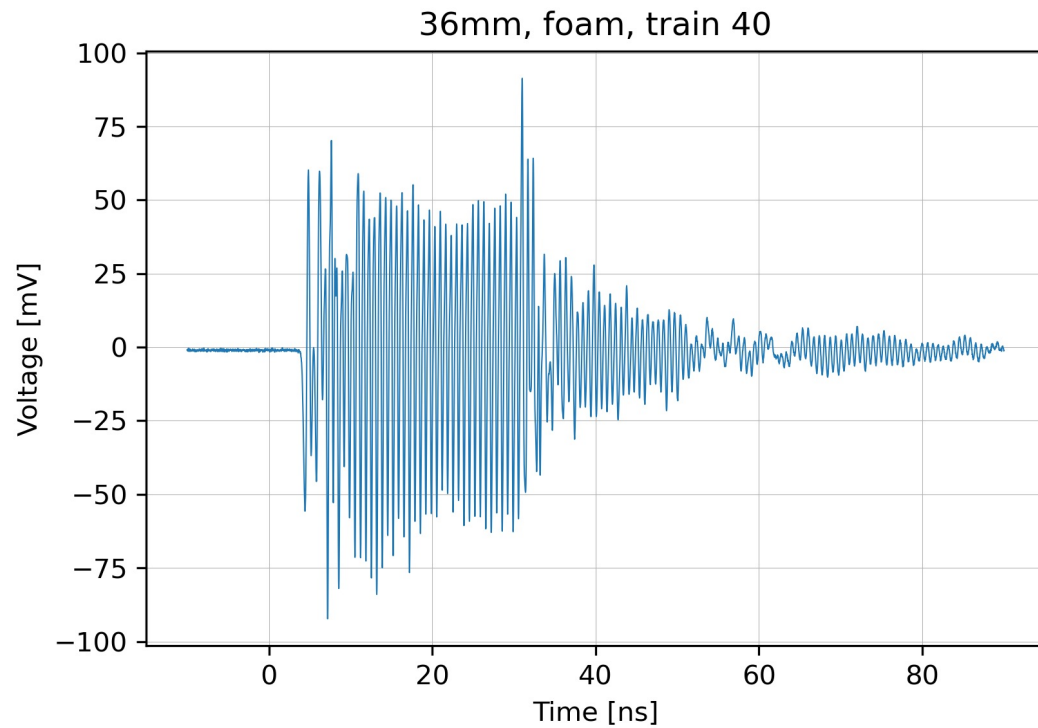
1 bunch



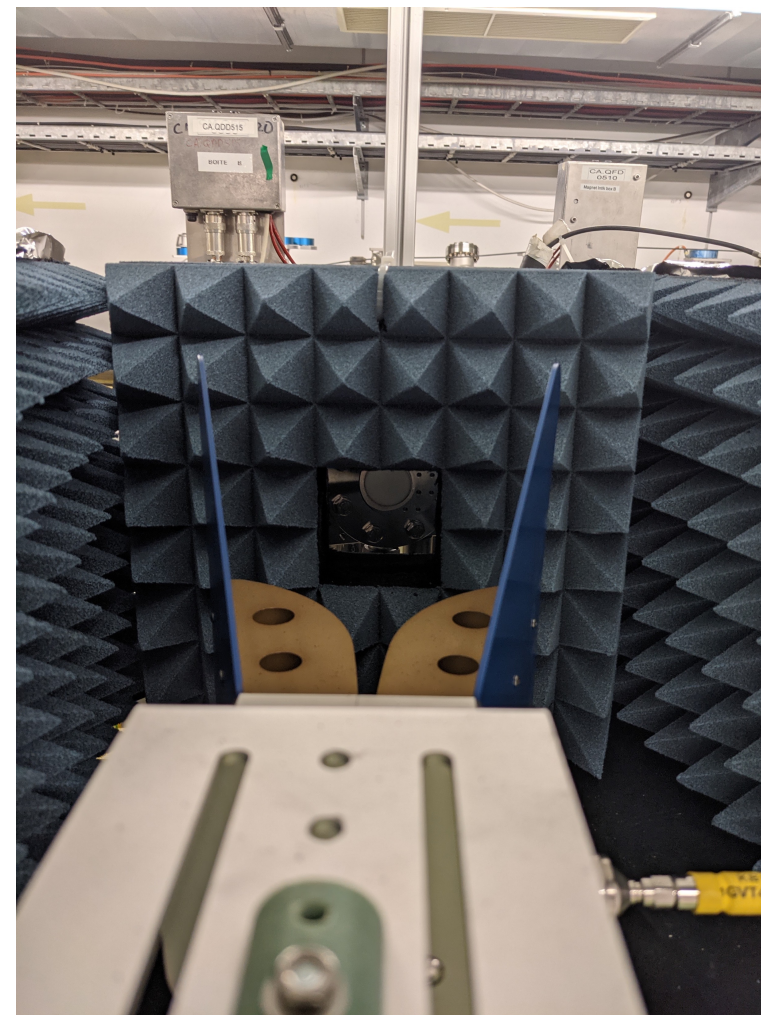
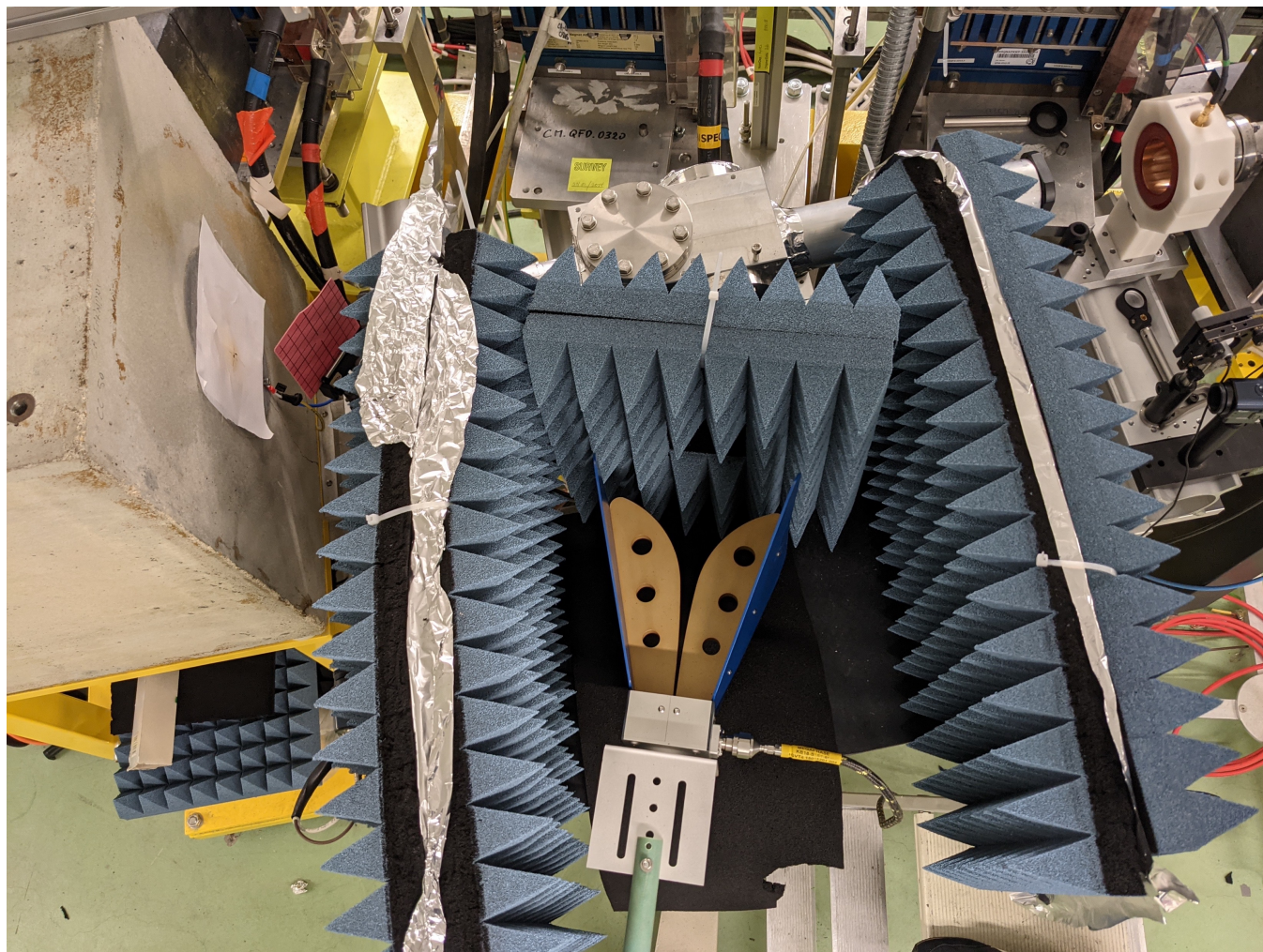
4 bunches



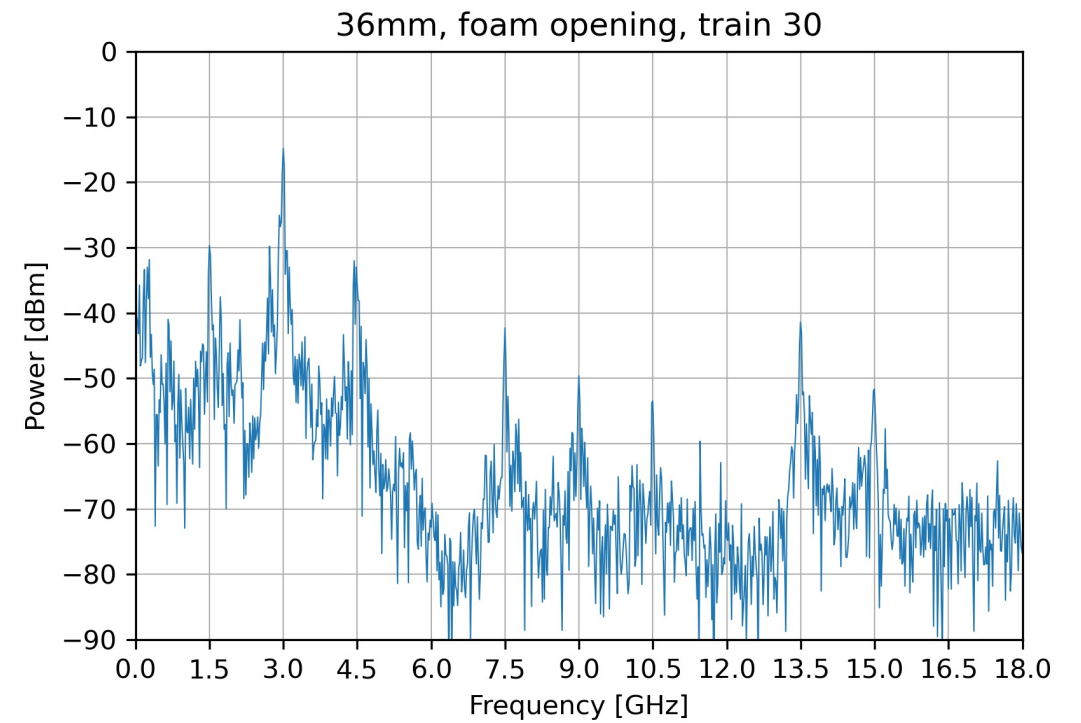
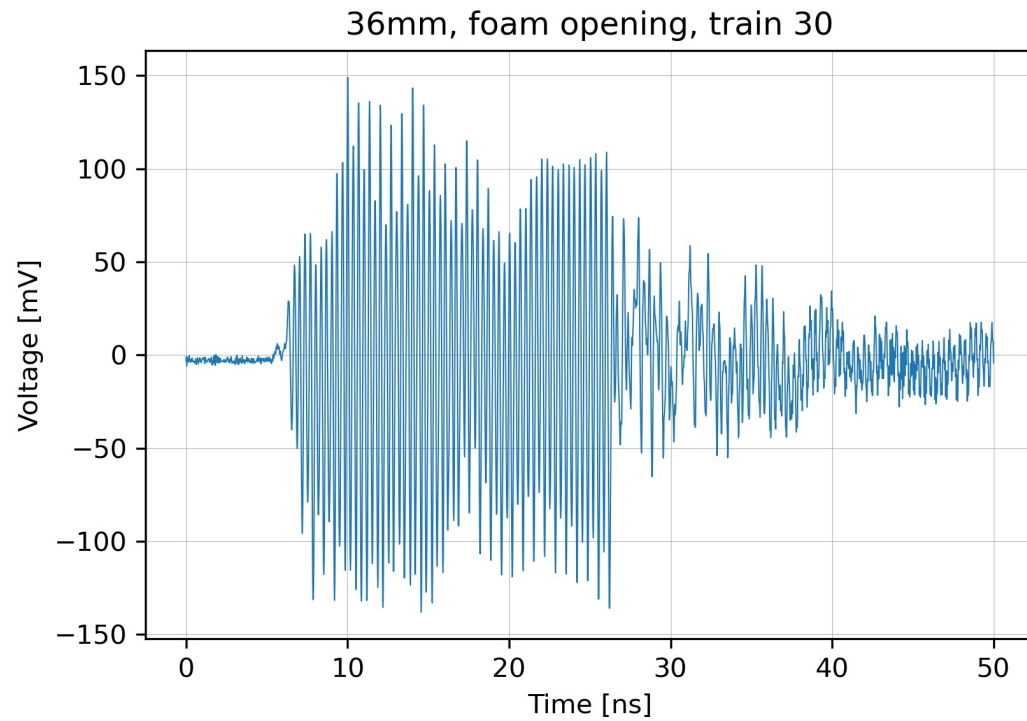
# Long trains, attenuating background and signal



# Final Setup



# Long trains, attenuating background



# First conclusions

- High shielding/attenuation needed to increase signal-to-noise ratio
- Expected cutoff at 1.6 GHz for 36mm buttons  
→ Visible at attenuation of the 1.5 GHz peak
- For 15mm and 6mm buttons no measurements possible due to poor signal-to-noise ratio for smaller buttons
- Background levels in the low GHz range much higher than expected → Possibly vacuum setup needed to mitigate background levels