

# Acoustic Breakdown Localization in RF Cavities

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MAP Spring Meeting

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FNAL, Batavia IL, USA

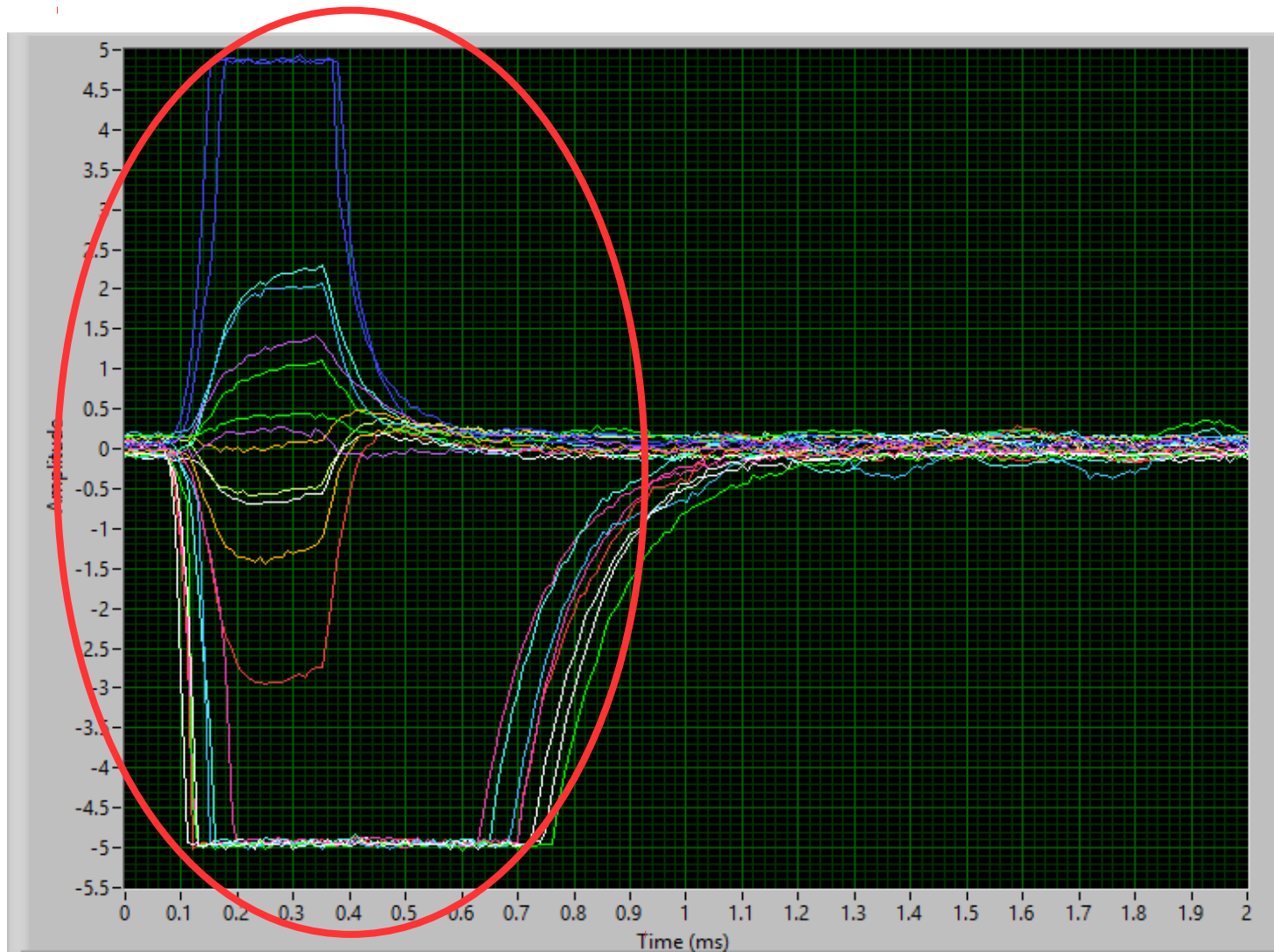
# Acoustic Breakdown Localization



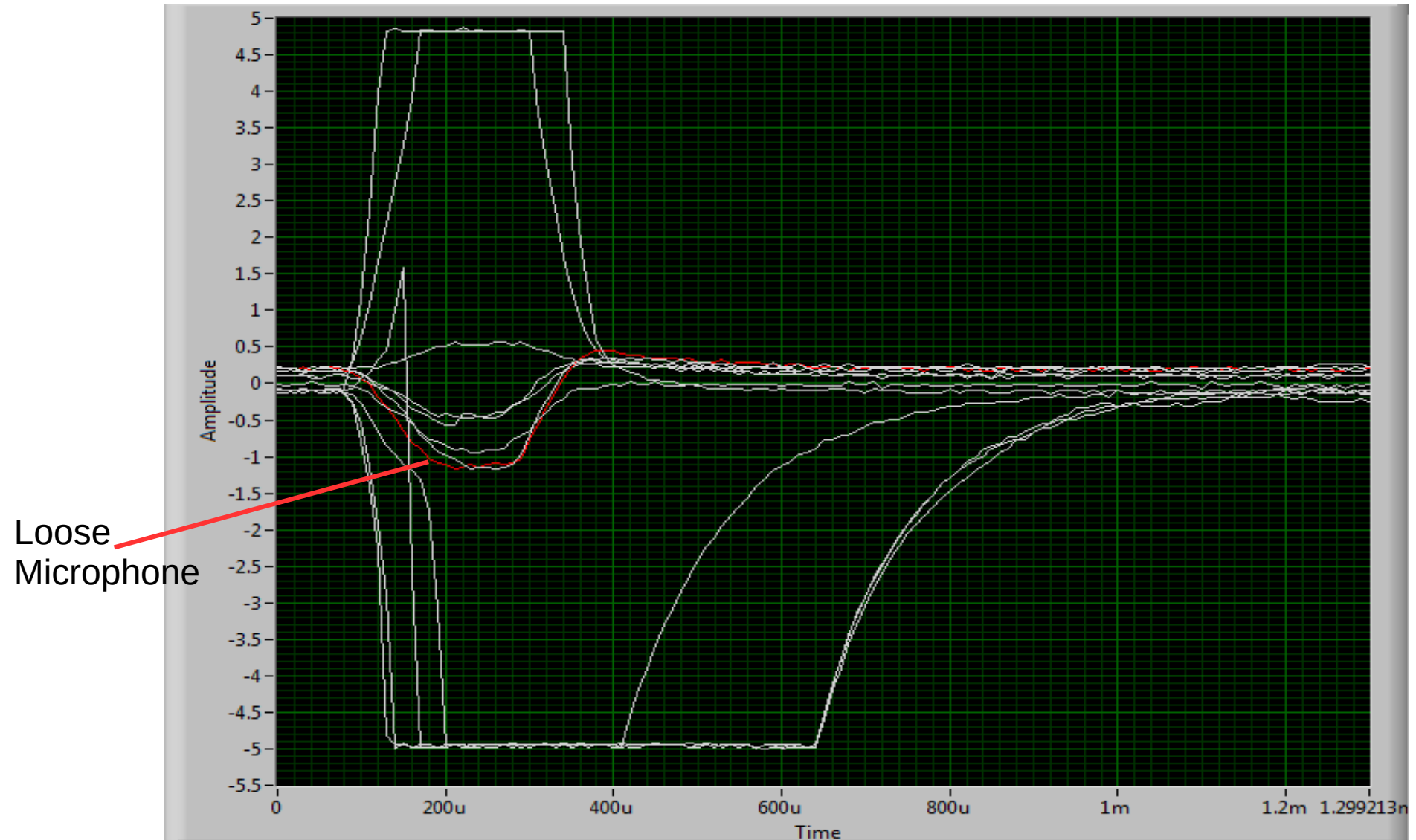
# MAP Winter Meeting 2014 Checklist



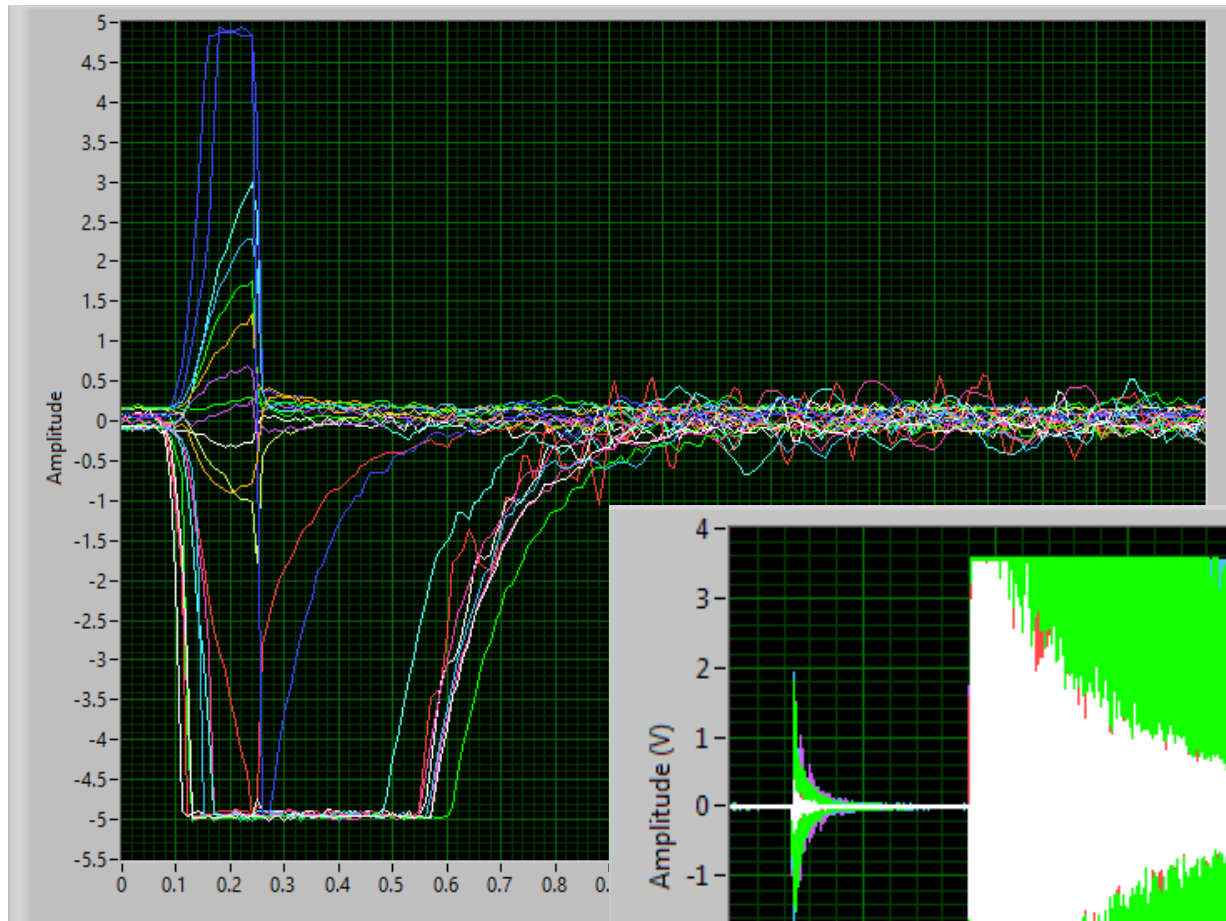
# What is that?



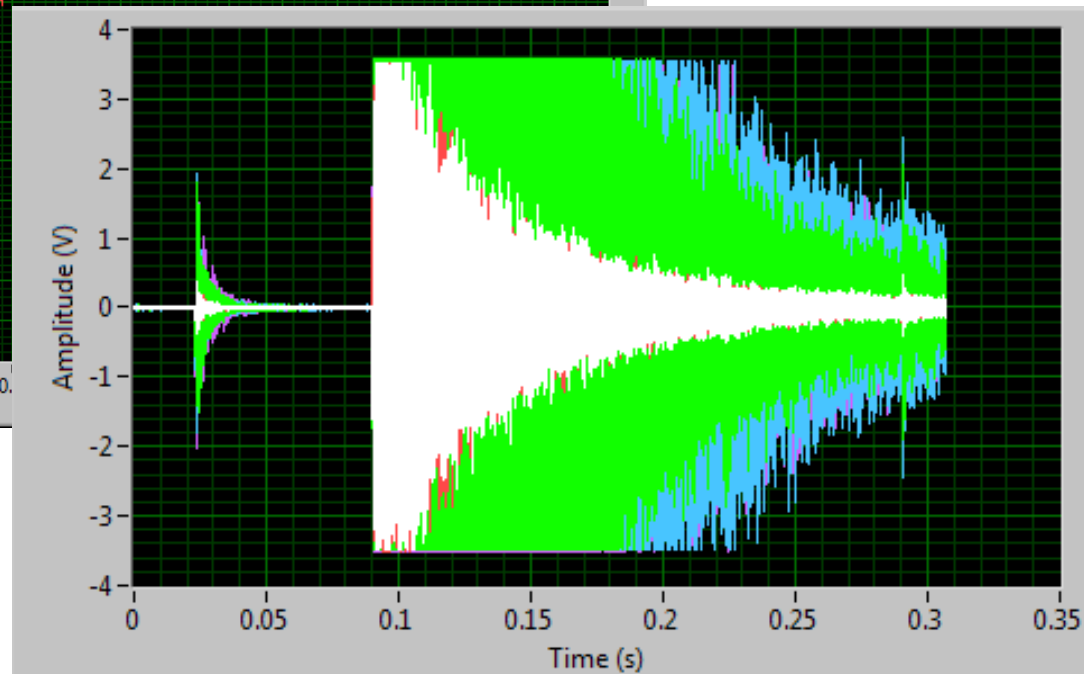
# RFI or Interesting Acoustics?



# Is this thing on?

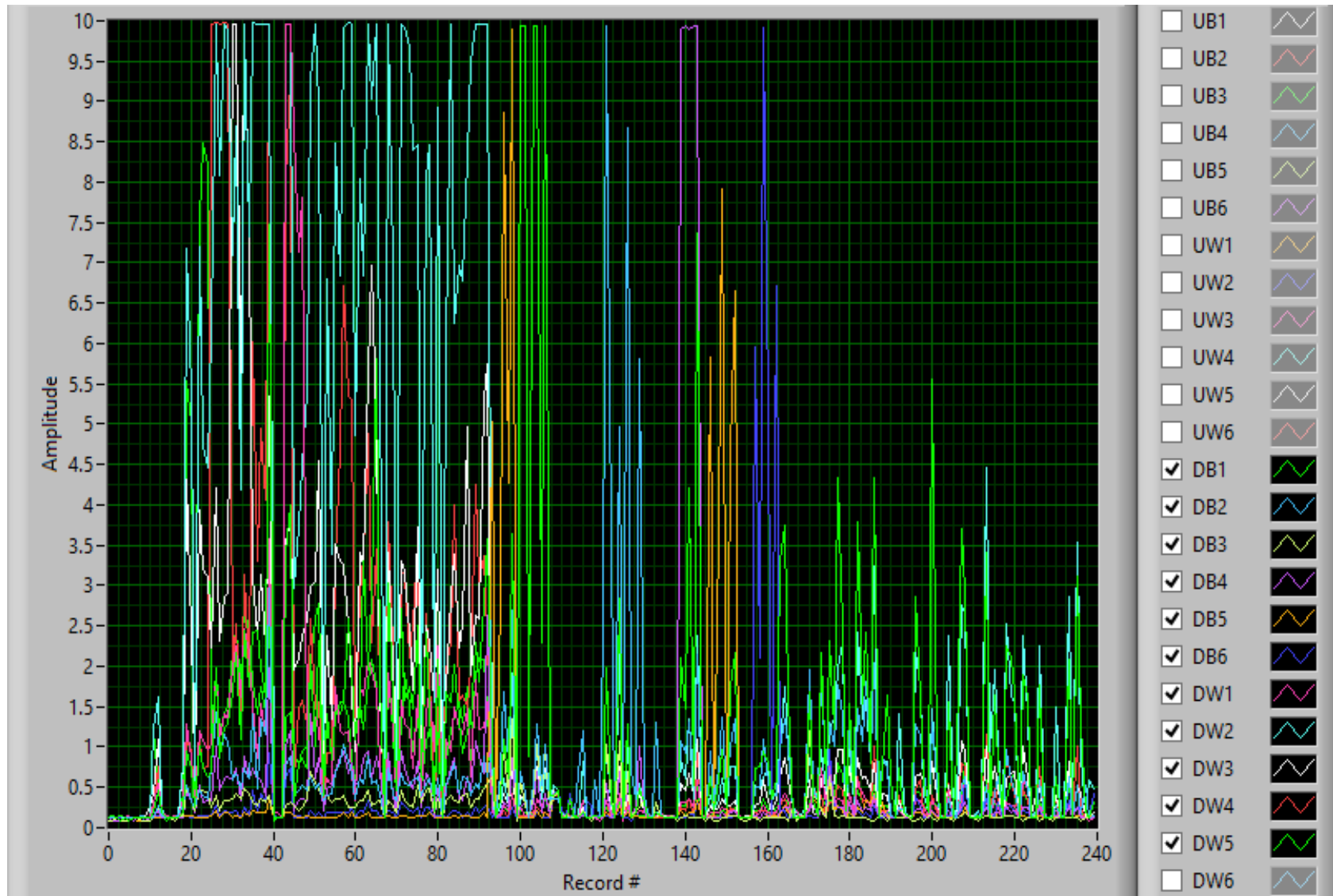


MICE Cavity



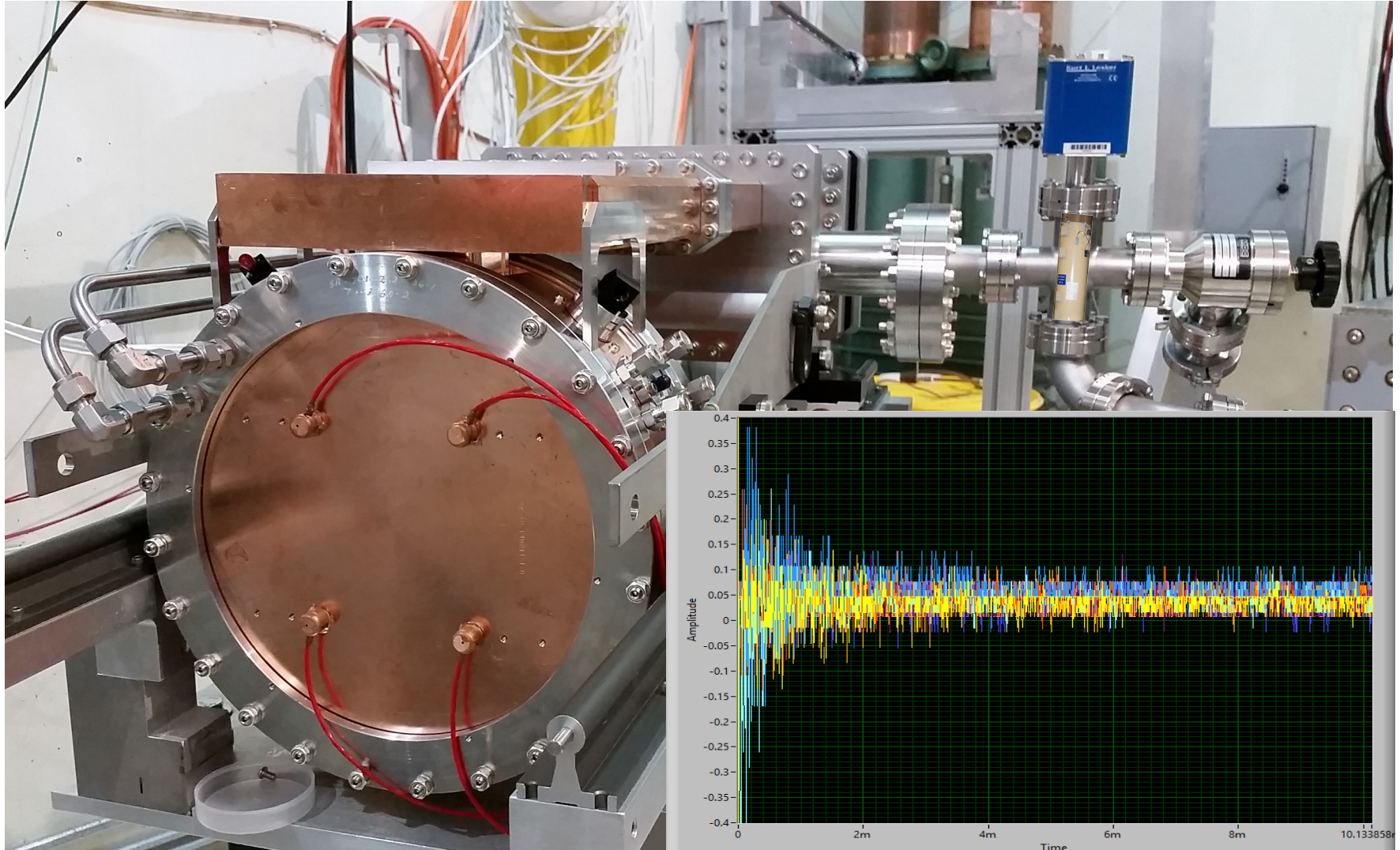
HPRF Cavity

# Mic Check





# Modular Cavity

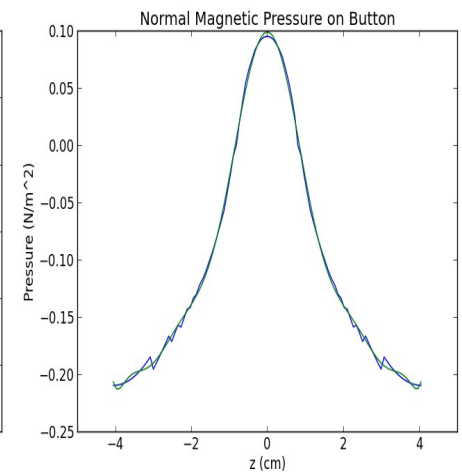
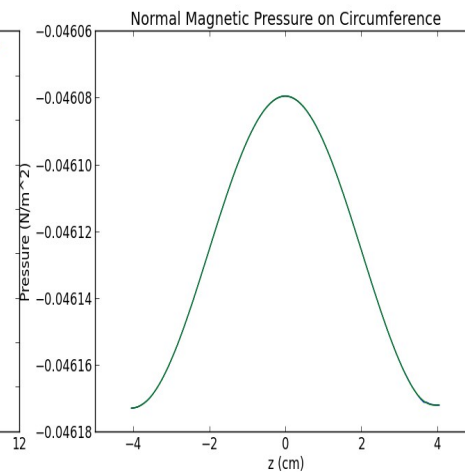
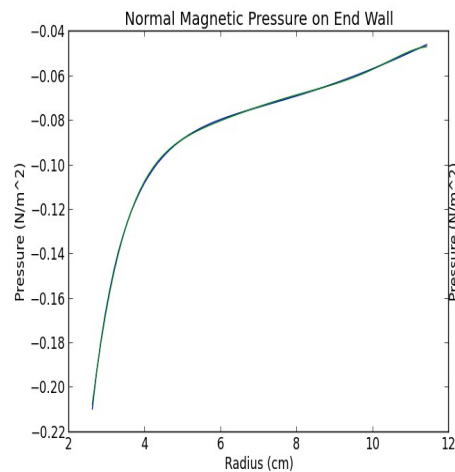
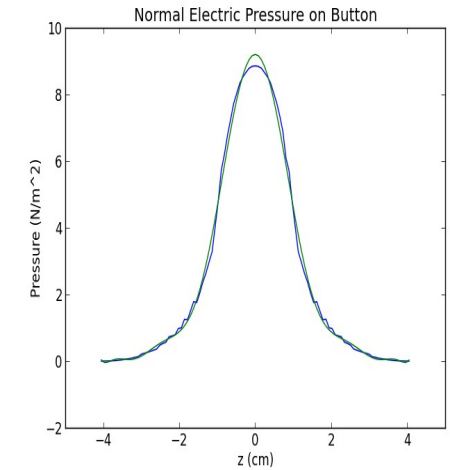
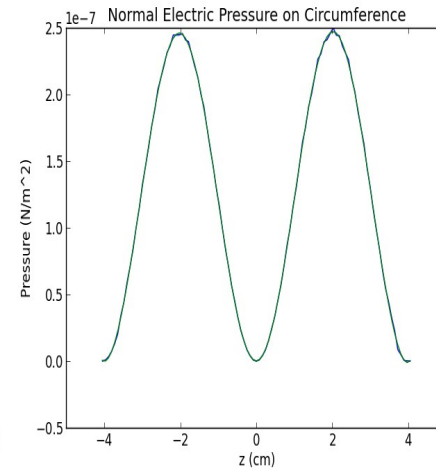
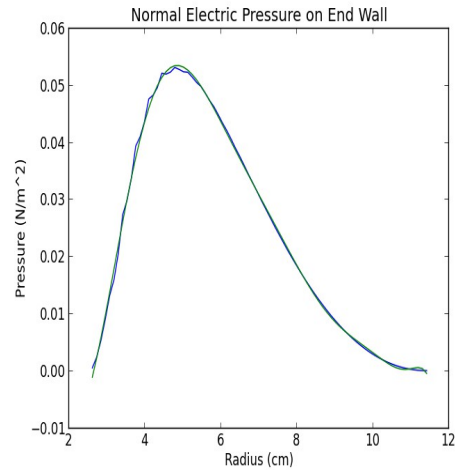
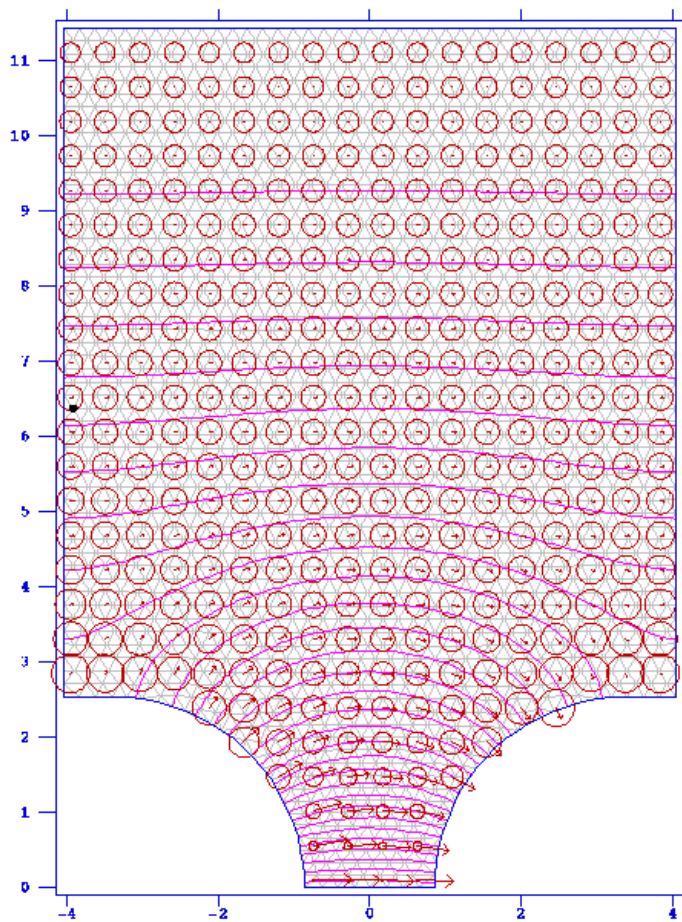




# What's on the horizon?



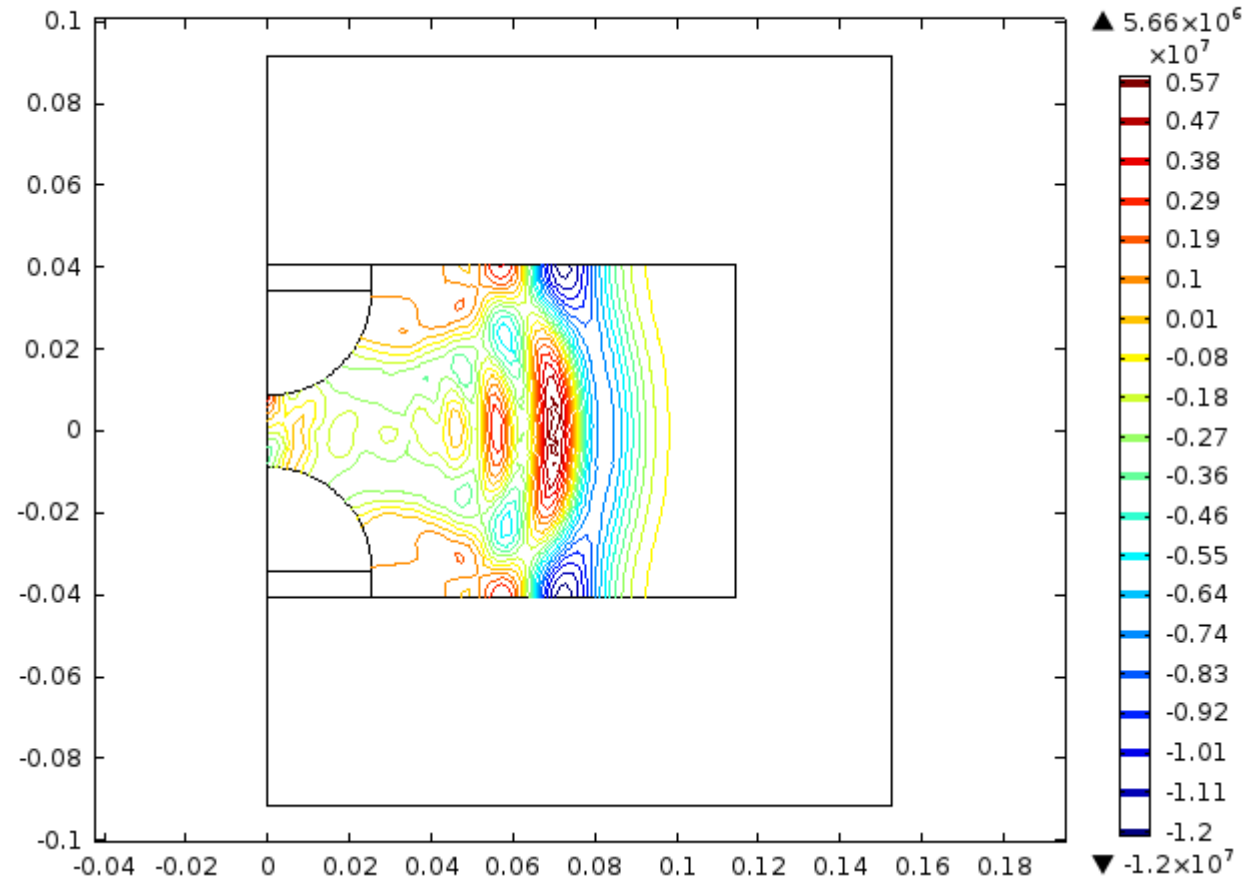
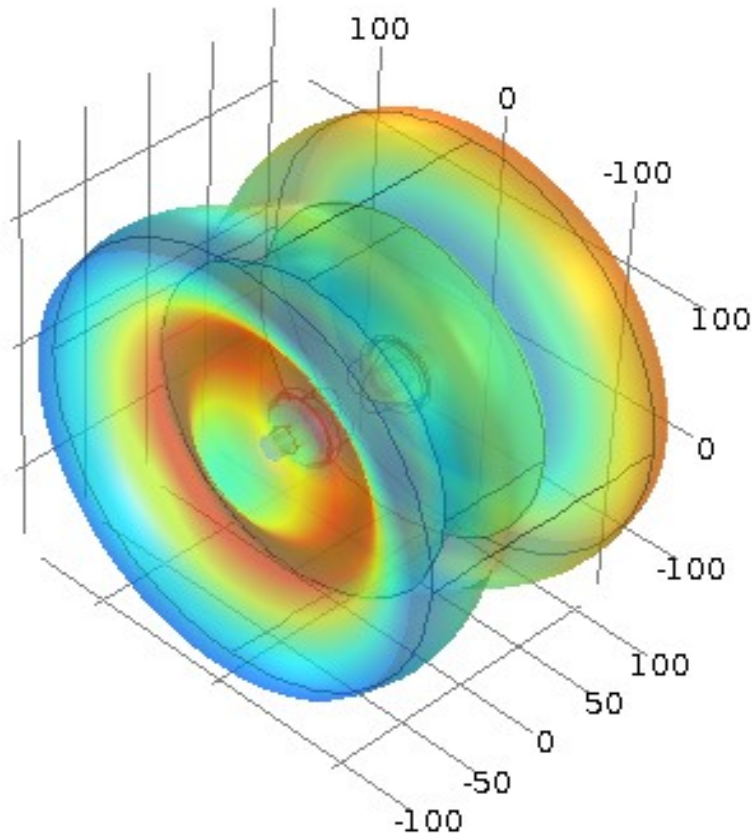
# Simulations: Model Verification



# Simulations: Signal Analysis

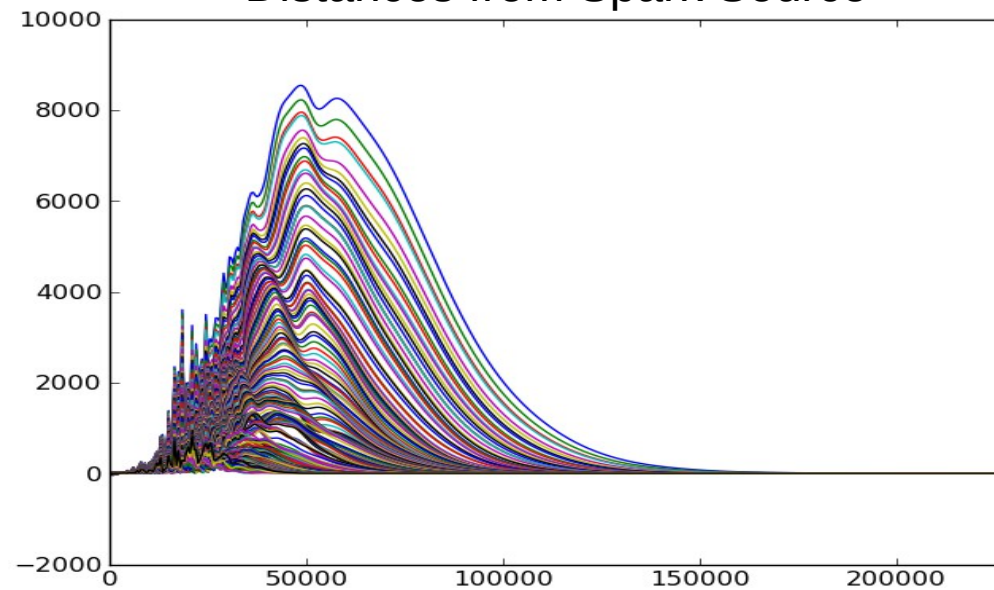
Time=7e-5 s Contour: Total acoustic pressure field (Pa)

COMSOL  
MULTIPHYSICS

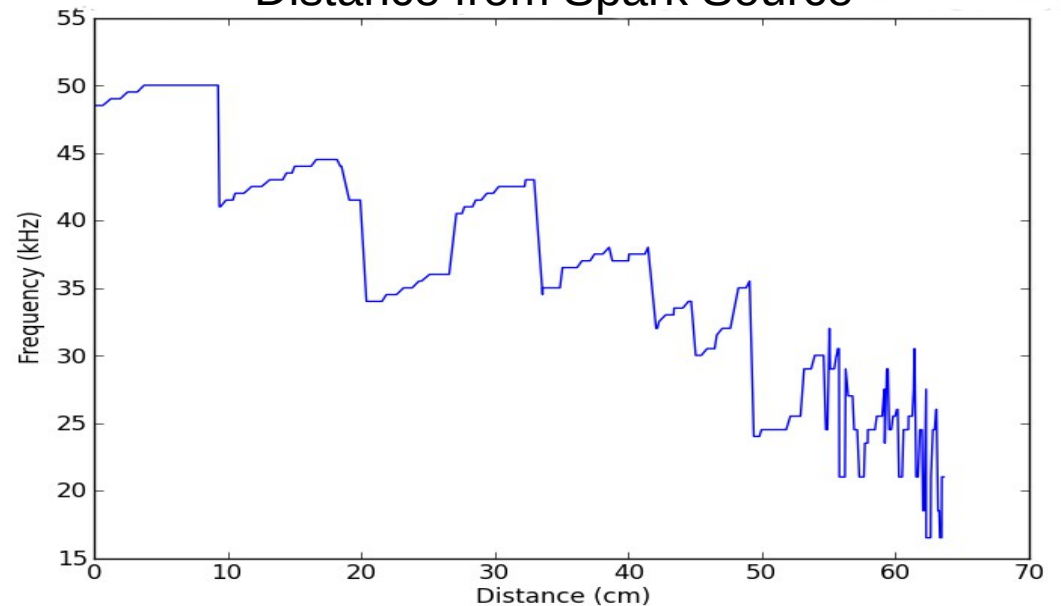


# Localization Algorithm

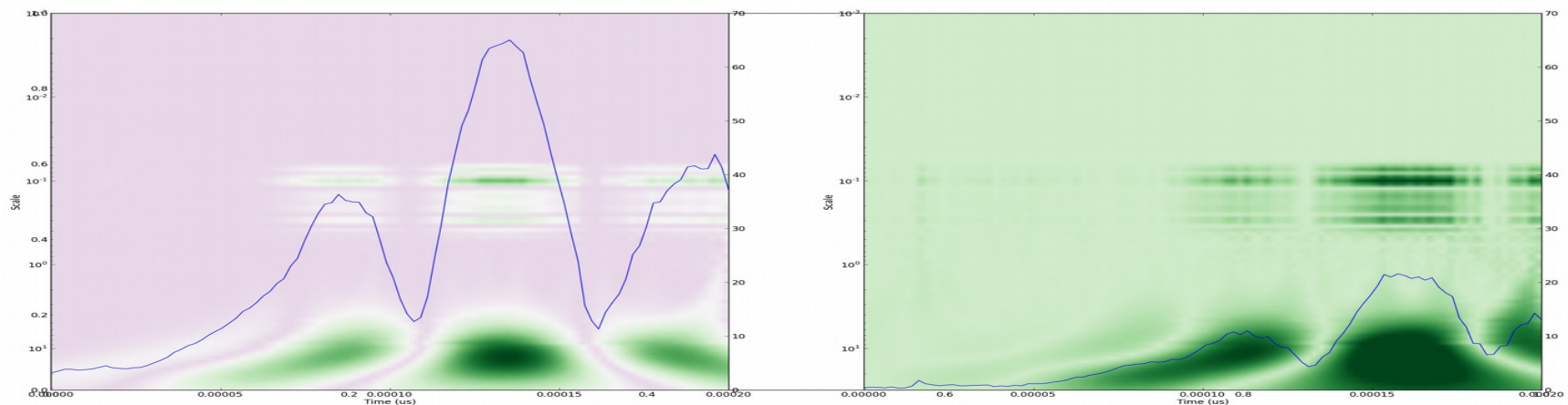
Freq. Spectra at Various Distances from Spark Source



Most Prominent Freq. vs Microphone Distance from Spark Source



Wavelet Transform and Sum





# Seeing the Trees for the Forest

