18:02:37 From Drew Cady : Good afternoon.
18:02:45 From Greg Dixon : hi Drew!!
18:02:50 From Steven Bell : Hello!
18:03:04 From Rob Maher [Bozeman, MT] : Thanks for hosting us, PNW AES!
18:03:05 From gg@aes.org Gary Gottlieb : Nice to be here!
18:03:33 From Marc A. Gallo : Hi Everyone…all the way from Philly!
18:05:10 From PETER DOELL : Hola, chicos! Why are there so many grey-haired guys on this???
18:06:52 From gg@aes.org Gary Gottlieb : @peter Doell at least we have hair!
18:07:12 From PETER DOELL : Speak for your SELF!
18:07:12 From Don Hartley, CTS : Hello from Las Vegas
18:07:41 From gg@aes.org Gary Gottlieb : Greetings to all from lovely Ukiah, California!
18:08:10 From soundsuresh : GM to All from India
18:08:21 From Jess Berg (she/her) : Hello from St. Paul, MN
18:09:31 From Erin Shellman : 👋 from Seattle
18:11:53 From Chris Myring : Greetings from Leicester in the UK.
18:12:44 From Jayney Wallick : Glad you could make it Chris!
18:13:22 From Dan Mortensen : Shut off your video, everyone.
18:13:31 From Dan Mortensen : That thing didn't quite work.
18:18:24 From Micah Hayes : Hello from Seattle!
18:33:14 From Rod Evenson : The word Velocity with regard to sound can have two meanings, One is the speed of propagation approximately 343 meters /second, the other refers to the velocity of the air molecules moving the diaphragm. The voltage output of an unloaded ribbon
18:34:27 From Dan Mortensen : To those who arrived after the beginning: We like to have you show your real name so people can know who they're talking with. If you'd like to have your real name show (which is optional at this point) send me a private message and I'll rename you. If you don't, that's OK for now but when we have open discussion at the end we'll require your real name to show. Thanks!
18:36:16 From Rod Evenson : The word Velocity with regard to sound can have two meanings, One is the speed of propagation approximately 343 meters /second, the other refers to the velocity of the air molecules moving the diaphragm. The voltage output of an unloaded ribbon microphone is proportional to the velocity of the air molecules which is variable and not the speed of propagation of sound. Is there better way of referring to these different uses of the word velocity?
18:38:16 From Greg Dixon : Rod, I'll forward the question to our presenter when the time is appropriate.
18:38:38 From Rod Evenson : Thanks Greg
18:42:53 From Rod Evenson : Could you go into the differences in preamp requirements between types of microphones between
18:43:54 From Rod Evenson : Could you go into the differences

in preamp requirements between types of microphones ie ribbon vs dynamic vs condenser.
18:44:43 From Greg Dixon : Rod yes I'll make sure to forward your question over to Steve
18:48:17 From Mike Matesky : I'd include Radial's McBoost to boost ribbon microphone level.
18:49:35 From Greg Dixon : Yes Mike M. Fethead is another popular option. There seem to be more and more each year.
18:53:05 From Rob Maher [Bozeman, MT] : In a plane wave, the ratio of acoustic pressure (p) to particle speed (u) is the specific acoustic impedance: rho_naut times c, where rho_naut is the equilibrium air density and c is the speed of sound (phase speed, e.g., 343 m/s). At room temperature (p/u)= rho_naut times c is 415 Pa-s/m.

For a spherical wave, the acoustic impedance is lower as you get closer to the spherical source with respect to the wavelength, meaning that for a given acoustic pressure, the particle velocity increases as you get closer to the source. The "proximity effect" is because a microphone sensitive to particle velocity (u) will be presented with a higher velocity as the source gets closer.
18:53:05 From Bob Smith : slide needs correction from 96 to 94 dBSPL
18:58:16 From Rod Evenson : I have a Magnacord PT6 preamp with a 50 ohm input
18:59:00 From Greg Dixon : that seems really low Rod I have heard rule of thumb is preamp impedance to be 10 times that of the mic we connect to it.
19:02:22 From Marc A. Gallo : Great presentation…I have to leave…enjoy!
19:02:33 From Greg Dixon : thanks for joining us, Marc
19:04:15 From Rod Evenson : I have a Magnacord PT6 preamp with a 50 ohm input impedance and a max gain of 104 dB and use it with an RCA 77dx or Shure Model 300, both set to their lowest output impedance. I do not have the hum or RFI problems that are present with the more contemporary mic preamps. Neumann on the other hand indicates that the load for it's mic output shouldn't be less than 1 k ohm. Looking for a comment.
19:06:30 From Greg Dixon : fyi I have a Shure 300 here in front of me and low impedance setting says 30-50 Ohms, so roughly matching Rod's PT6 input impedance
19:07:27 From Wayne Edwards : ribbon mics born figure-8, I believe. But the others...yeah.
19:09:54 From Rod Evenson : Two kinds of Mics: Pressure = Omni,, Velocity also called gradient is the other. All else is a combination of the two.
19:10:17 From Dan Mortensen : I'd like to hear someone who regularly does monitors for an act that does the full mic cup all the time, talk about what they have to do to get the SPL and feedback resistance necessary to get the monitors as loud as acts demand.

19:22:29 From Greg Dixon : Beyer m201 hypercardioid is another good choice for a snare mic
19:31:04 From Rod Evenson : I have to use phase reversers to correct for miss wired sound systems.
19:32:34 From Dan Mortensen : I may have missed something, but how does the Transparent vs. Adjacent classification conform to the Inverse Square Law, or violate it?
19:33:47 From Greg Dixon : Good question, Dan. I'll ask Steve
19:35:25 From soundsuresh : line return
19:35:28 From Avinash Oak : R - resilient
19:35:38 From Luke Pacholski : X series
Latching
Resiliant
19:37:45 From Steve Turnidge : https://www.aes.org/par/c/#connectors has a great definition...
19:41:49 From soundsuresh : why it is called us Phantom power? any reason
19:42:31 From Avinash Oak : not seen
19:43:16 From Avinash Oak : the cables carrying audio to mixer are carrying the dc to the mic
19:44:24 From Luke Pacholski : How can the ribbon blow like a fuse when the transformer doesn't pass DC?
19:45:48 From Rod Evenson : Watch out for RTS patch bays with phantom power
19:45:56 From jerry jensen : Pin 1, shield and ground are not all the same.
19:47:29 From Greg Dixon : Jerry, I'm not sure I understand what you mean could you expand a bit and I can try to clarify if needed.
19:52:53 From Greg Dixon : we could sure use more thunder (and rain) here in Seattle
19:53:26 From Jayney Wallick : No kidding Greg! This has to be the driest October on record!
19:57:00 From Greg Dixon : note that the em32 is "Eigenmike" there is small typo there
19:58:17 From Avinash Oak : Are there no 'phase' issues as the mics are so close to each other?
19:59:12 From Greg Dixon : Avinash, I believe the idea the phase difference is so slight that it only affects high frequencies above the audible bandwidth.
19:59:13 From jerry jensen : Greg. too big a topic. A whole episode by Bill Whitlock would explain it well.
19:59:26 From Greg Dixon : Jerry noted. Thank you
19:59:49 From Avinash Oak : yes. Thax Greg
20:00:57 From gg@aes.org Gary Gottlieb : Being happy is important!
20:01:31 From Greg Dixon : lol
20:01:33 From Avinash Oak : 😄😄
20:04:04 From Steven Bell : This has been great! Thank you so much for sharing

20:07:39 From B. Craddock : Thanks!
20:08:08 From Marcus : I'm a music creator, and I have been using a mic with an audio interface. When using the microphone, my “s" sounds a bit more like “sh.” Does the audio interface also affect how the mic sounds? And if so, what are the best in the market?
20:08:16 From soundsuresh : How a single capsule or diaphragm will pick all frequency. bcs in reproduction we have 2 or 3-way speaker used to reproduction varies frequency to have better sound why not applied to the microphone.
20:09:05 From Don Hartley, CTS : Thank you for the great information. My battery is about done. Have a nice evening!
20:10:26 From Chris Myring : Thanks, Steve, for a great presentation.
20:15:26 From Brian Dorsey : Another experiment that helps hear this effect is to record a voice at medium distance on two mics at once (say sm58 and a condenser lav) in a resonant room. You’ll hear less echo in the dynamic. The room sounds less “roomy”
20:18:33 From Avinash Oak : Yes Brian, I think the condensers are picking up the ambience more and that is why the level goes down smoothly.
20:18:59 From Mike Matesky : The AKG202E was a 2-way mic.
20:19:12 From Greg Dixon : Mike can you expand a bit on that design
20:19:39 From Luke Pacholski : AKG D224 as well.
20:20:08 From Mike Matesky : I’d rather not as I’m listening. I’m not a multi talker ;)
20:20:13 From Rick Lambright : Thanks very much, Steve. Super educational. Gotta run.
20:20:19 From Mike Matesky : Tasker!
20:20:56 From Greg Dixon : no worries Mike I can look it up later. I'm not familiar with that mic design
20:25:50 From Rod Evenson : Greg, I can put up a diagram from Sennheiser showing relative distance sound source/distance for different mic directional patterns
20:26:21 From Greg Dixon : Rod, sure feel free to post it here if it's possible.
20:26:25 From Avinash Oak : What is reason for a condenser sounds different when put 'inverted'?
20:27:29 From Greg Dixon : Avinash do you mean inverted phase? Are you referring to a specific mic?
20:27:37 From Greg Dixon : sorry inverted polarity lol
20:27:55 From Avinash Oak : no imean physically inverted.
20:28:35 From Greg Dixon : Avinash, like turned around 180 degrees?
20:28:41 From Avinash Oak : yes
20:28:44 From Luke Pacholski : There's your answer, Dan.
20:28:59 From Greg Dixon : okay it's also true of ribbons I'll ask
20:34:03 From Mike Matesky : I think the AEA N22 differs a bit front to back.

20:34:54 From Greg Dixon : yes, Mike as I recall AEA marketed that as a unique intended feature of that particular mic
20:34:57 From Mike Matesky : The total energy differential between an omni and a cardioid is 1.732? dB (square root of 3). Another way of saying something quite similar.
20:35:19 From soundsuresh : How small diaphragm will able to pick the low frequency? (they wavelength is more in length)
20:35:24 From Gene Williams : Great session, thanks immensely to Steve, Dan and Greg for doing this. I truly appreciate your time and knowledge.
20:35:38 From Greg Dixon : thanks for joining us, Gene!
20:37:44 From Avinash Oak : Great session, thanks all the specialists!!
20:38:53 From Mike Matesky : Wes's are either 80, 83.5 or 84+ dB gain. I believe they are Forsell (sp) designs. But, you guys are spot on re the input impedance.
20:41:40 From George mathew : 416 or 8060 which sounds good in a smaller room.
20:43:13 From Brian Dorsey : Thank you for the presentation!
20:44:03 From soundsuresh : Thanks to all for sharing the knowledge about the microphone _/_ once again thanks for arranging this
20:49:29 From Mike Matesky : Excellent meeting, Steve!
20:49:53 From Brian Dorsey : Thanks everyone! Apologies, have to run off! Take care all!
20:50:24 From Jayney Wallick : Thanks for stopping by Brian, hope you can make it again next time!
20:51:44 From Greg Dixon : glad to hear you are busy again, Jayney!!
20:51:59 From Jayney Wallick : You and me both Greg!
20:53:35 From Bradley Steinbach : No camera right now, mic is a ways away (definitely outside of working distance). I just graduated from Chapman University in Orange County, CA with my MFA in Sound Design for Film and Television, currently looking for work in the OC area. I have experience with live sound, mainly for local city concerts.
20:54:08 From Bradley Steinbach : yes, Orange County Area.
20:54:29 From Bradley Steinbach : Thank you for this seminar! And yes, I will make sure I have my mic set up properly next time.
20:56:18 From Avinash Oak : avinashoak@gmail.com
20:59:27 From Chris Myring : Thanks for organising, Dan and Greg.
21:02:39 From Avinash Oak : Thanx everyone. Need to leave.
21:03:13 From Jayney Wallick : Thanks for stopping by Avinash, hope to see you on Saturday at Tea Time Topics!
21:05:03 From Greg Dixon : wow, Dan!!
21:06:05 From Greg Dixon : nice to hear you are busy again, Dan!!
21:06:59 From Mike Matesky : Great meeting. I've gotta go now. Best…

21:07:03 From Luke Pacholski : It's getting late here. Nice time everyone. See you next time.
21:07:17 From Jayney Wallick : See you both next time!
21:12:21 From Bradley Steinbach : Many are using Spatial Audio through headphones, such as Apple Airpods, Google Pixel Buds, etc.
21:17:40 From Rod Evenson : 3dsoundstage.com/ieee
21:24:27 From Bradley Steinbach : Thank you!