

Zoom V5.5.2 - Settings for Sound Therapy (Highest Quality Audio)

Introduction to Zoom's Automated Noise Suppression

The first thing to say is that Zoom has been designed from the ground up as a conferencing application so it is geared to hosting multiple people who contribute vocally and visually in a sizeable group scenario - very often in acoustically untreated, reverberant rooms and/or locations where there is significant uncontrolled (or uncontrollable) background noise.

Zoom Heavily Compresses Audio Leading to Poor Quality Sound

To keep total meeting bandwidth requirements for such large numbers of users to a minimum but also try to offer the best 'controlled' audio experience in such settings (where not everyone sticks to the rules about quiet surroundings and muting microphones when not in use) Zoom have employed significant Digital Signal Processing algorithms and minimal bandwidth for transmitting audio traffic for the majority of users.

Automatic volume controls and suppression background noise suppression are a large part of those algorithms. They attempt to aggressively suppress echos and continuous noise sources such as loud air conditioning fan noise. Some participants may be using integrated microphone/speaker systems (such as in a formal office setting) which already employ such algorithms and if Zoom does not recognise that equipment it effectively 'doubles' that type of processing, leading to impoverished sound quality and a frustrating meeting experience.

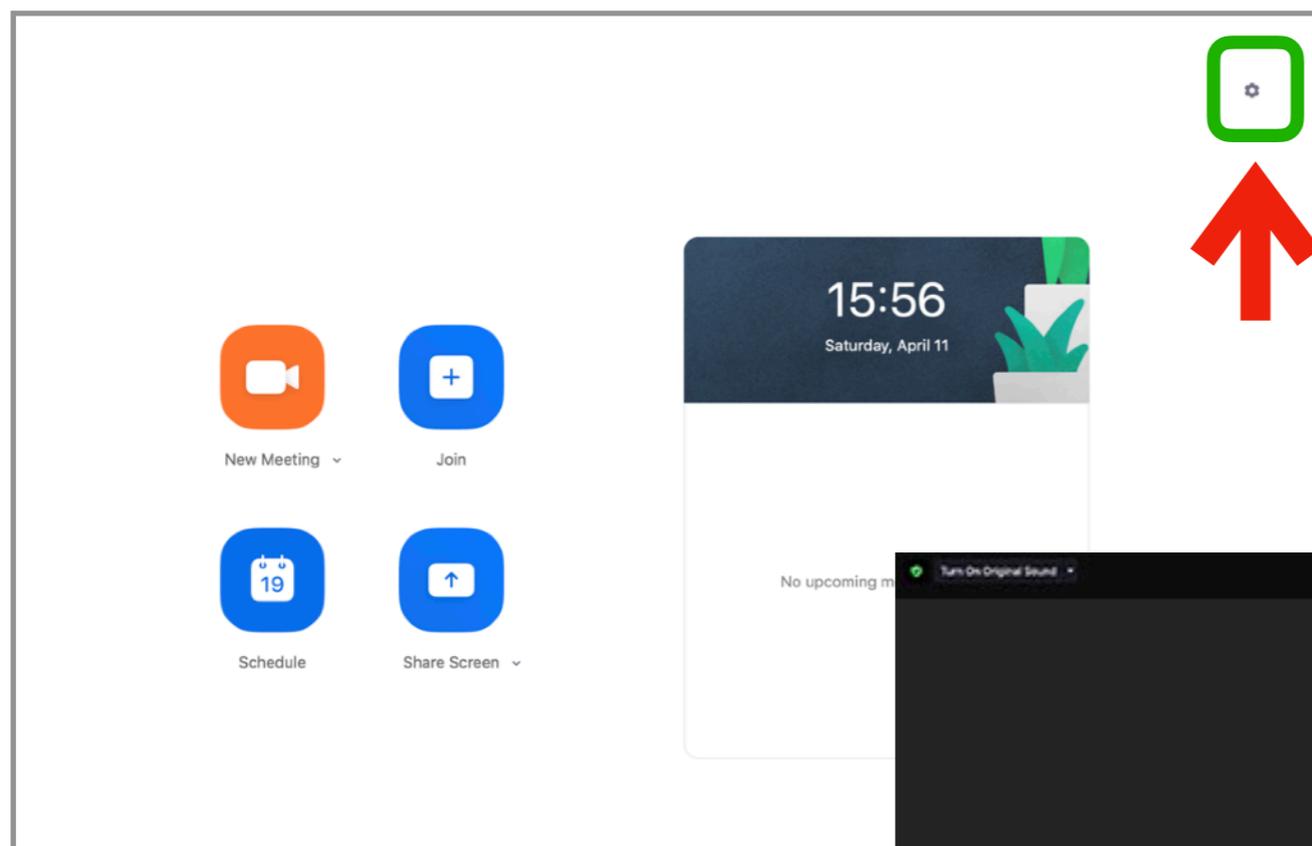
To explain automated noise suppression further; this technique employs learning algorithms which sample the noise between speakers' words and 'gates' out those frequencies while a participant is not actually speaking, lowering their microphone volume drastically, and near instantaneously, to reduce the impact of any echo or background noise source. Unfortunately this 'ducking' of the speaker's volume level takes time and can be quite aggressively applied, leading to the speaker's voice sounding as if it's being chopped off as they stop speaking and then masking off the first part of their following words when they begin to speak again. This 'hunting' of volume effect can be very disturbing to the listener. **If music, which contains many dynamic transients, is an important part of your meeting, Zoom's algorithms have a disastrous effect on audio quality and therefore on the overall experience of the audience. Even when 'Original Sound' and so called 'High Fidelity Music Mode' is enabled, Zoom still uses aggressive audio compression algorithms to reduce the amount of audio data it is streaming. So transmitted audio quality is still limited to 192Kb/sec (equivalent to an average MP3 file) - hardly hifi, which uses 1,411Kb/sec of data for CD quality. Stereo sources are summed to Mono in this mode. Stereo streaming can be achieved but with a much more advanced setup.**

Zoom attempts to recognise integrated microphone/speaker systems and disables some of these algorithms when it can but it is unreliable, so the best approach is to disable that particular automated feature unless you really need it turned on. Our best advice is to try and ensure that your environment is as quiet as possible and that you ensure muting is being adhered to by all participants. That will keep the overall noise levels for all at a minimum. That way you won't need the automated effects and the audio will sound as natural as possible.

Here is a link to Zoom's explanations from their support pages:

<https://support.zoom.us/hc/en-us/articles/360025379211-Zoom-Rooms-Audio-Guidelines>

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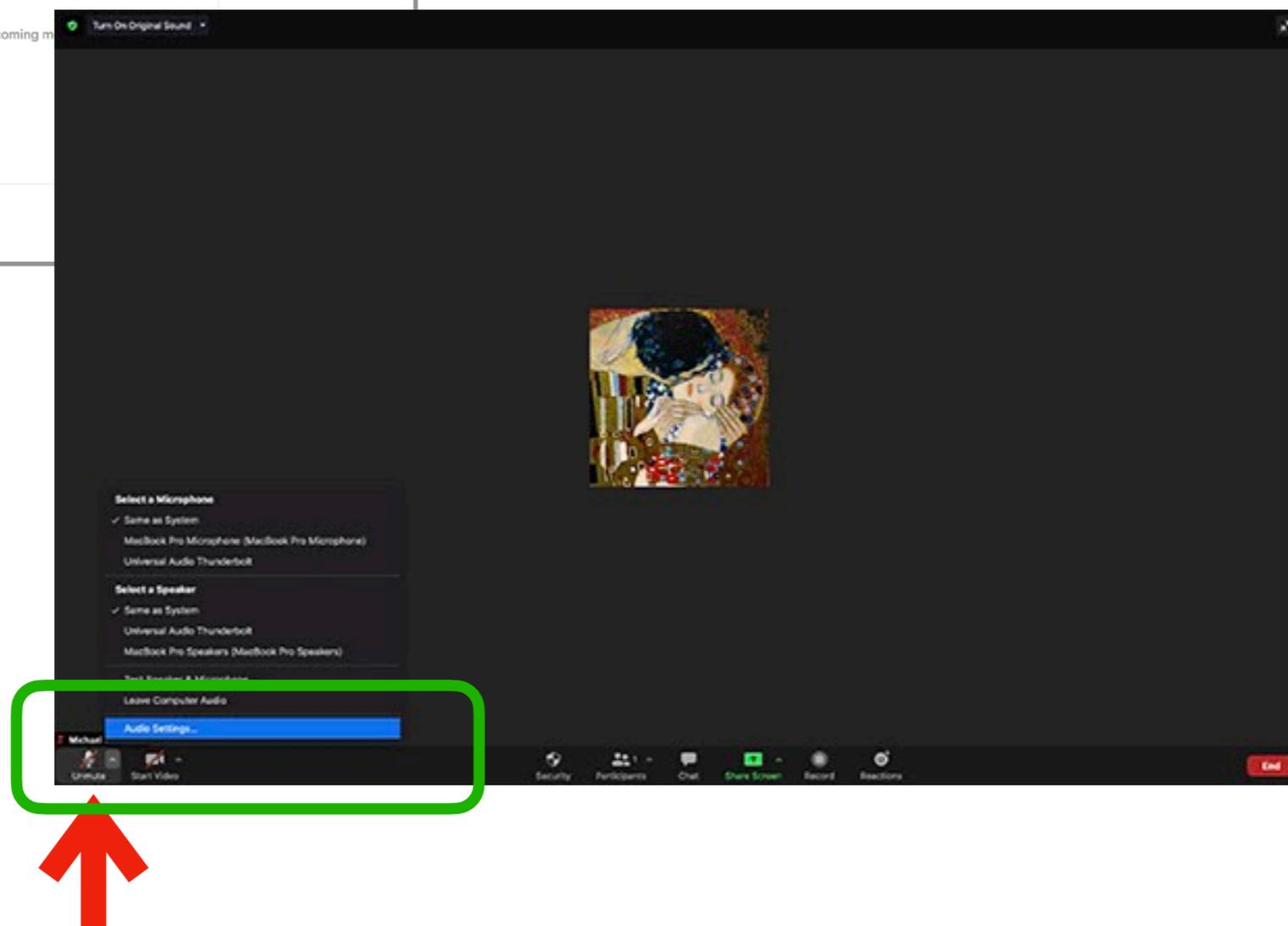


FIRST STEP:

Click on the Settings Icon to reach the Zoom Settings Panel - this is the icon on the front page of Zoom **BEFORE** you enter the session

OR:

You can reach the same setting panel by clicking on the **up-arrow next to the Mute symbol** in the bottom left of your screen at any time while you are in the actual session. That will allow you to **select the Audio Settings** from the pop up list.....



Select AUDIO item in the Settings list, then follow these steps:

The image shows the Zoom Settings application window, specifically the Audio settings page. The left sidebar contains various settings categories, with 'Audio' highlighted in a green box and labeled with a red '1'. A red arrow points from the top of the sidebar to the 'Audio' item. The main content area shows the 'Speaker' and 'Microphone' settings. The 'Microphone' section has 'Automatically adjust microphone volume' checked, which is circled in green and labeled with a red '2'. A red arrow points from this checkbox to the text 'Turn Auto OFF'. The 'Input Level' slider is highlighted in green and labeled with a red '2'. A green arrow points from this slider to the text 'Manually set Mic input level to give this average level while speaking normally'. The 'Suppress background noise' section has 'Auto' selected, which is circled in green and labeled with a red '3'. A red arrow points from this radio button to the text 'leave 'Suppress Background Noise' set at Auto'. A green arrow points from the 'Input Level' slider to the text 'Set mic level'. At the bottom of the settings page, there is a section for 'Music and Professional Audio' with a checked option 'Show in-meeting option to "Turn On Original Sound" from microphone'. A red arrow points from the bottom of the settings page to a green box containing a red '4', with the text 'Scroll down for other settings'.

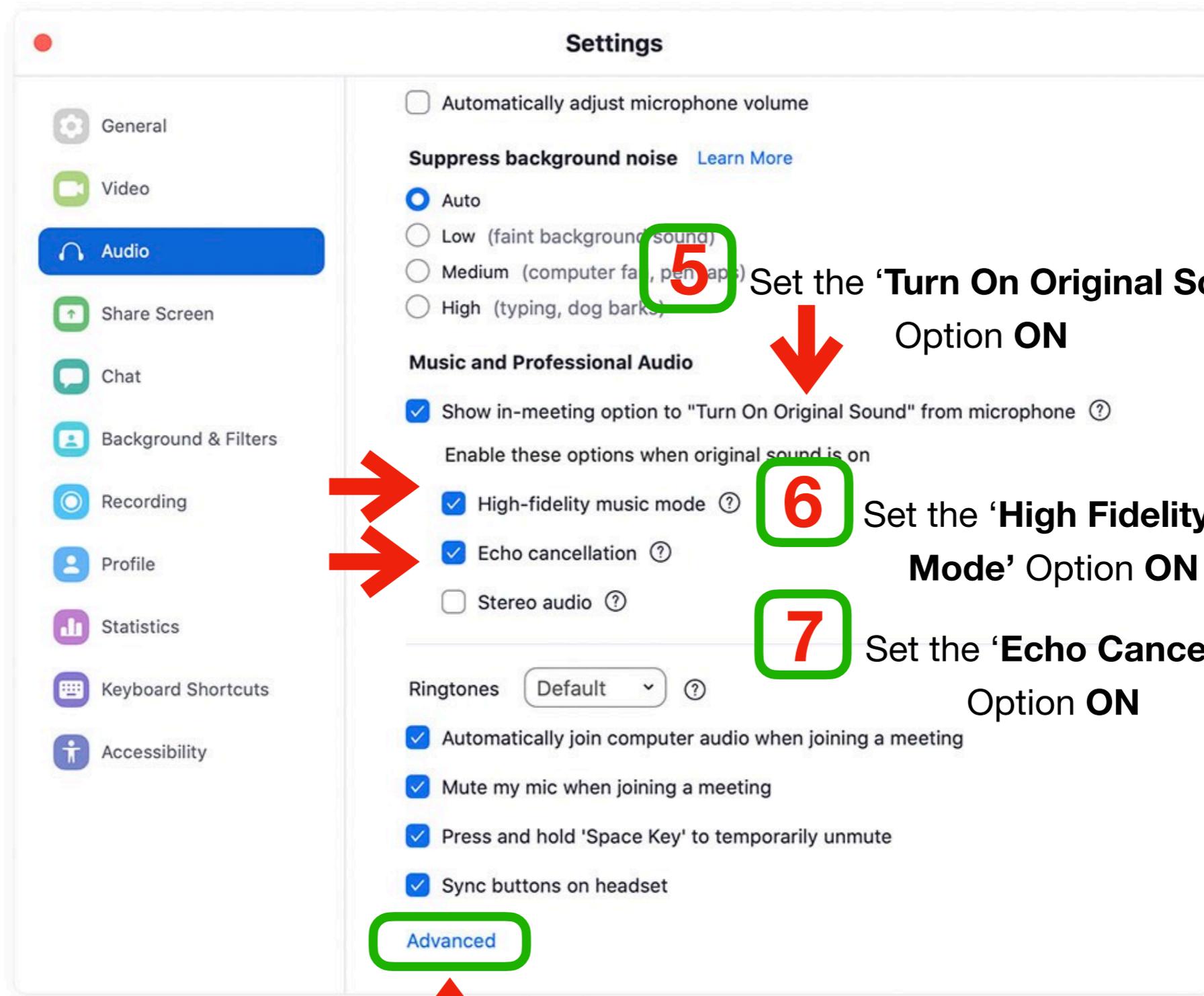
1 Turn Auto **OFF**

2 Manually set Mic input level to give this average level while speaking normally

3 leave 'Suppress Background Noise' set at **Auto**

4 Scroll down for other settings

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Set the 'Turn On Original Sound' Option ON



6

Set the 'High Fidelity Music Mode' Option ON



7

Set the 'Echo Cancellation' Option ON

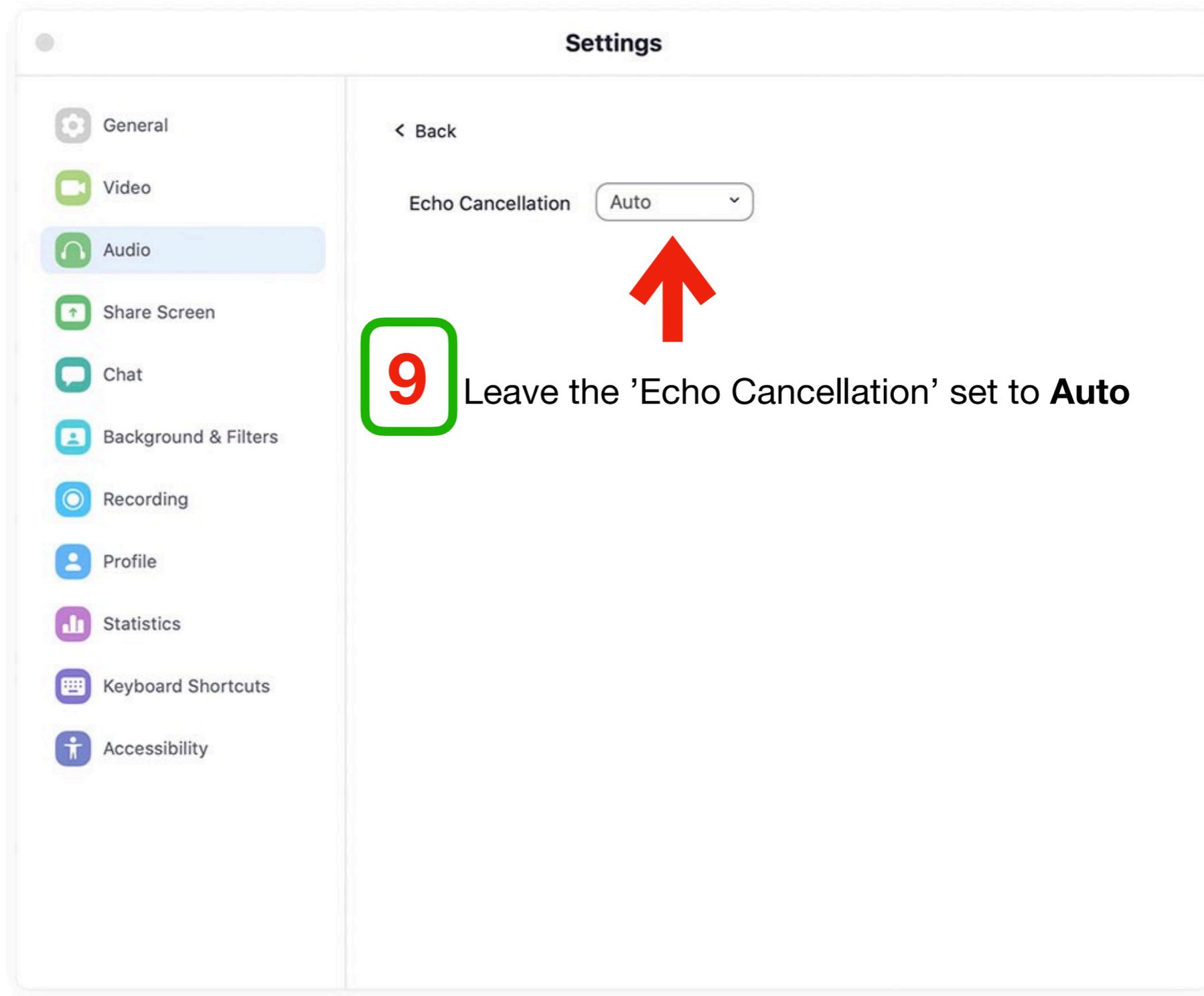
Advanced



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Click on the 'Advanced' text

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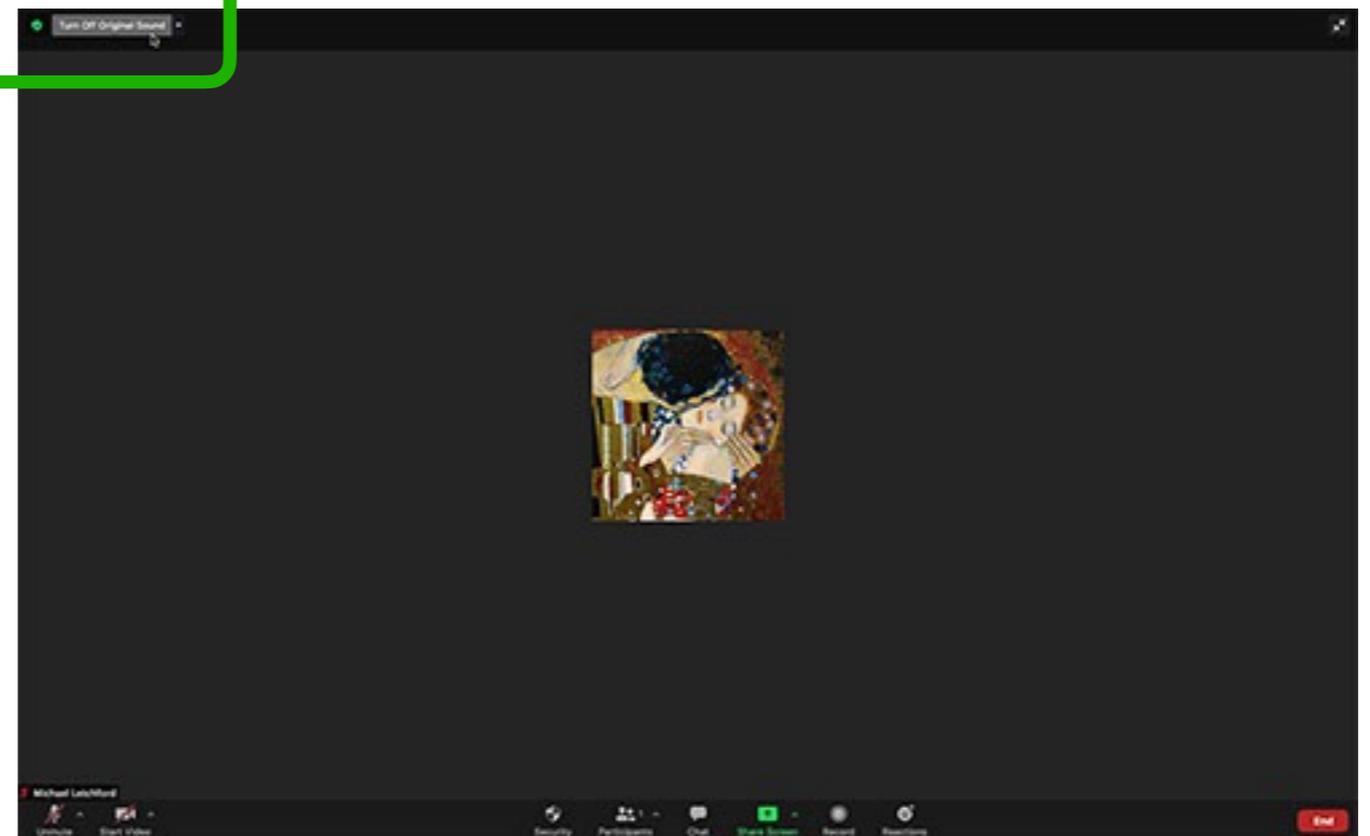
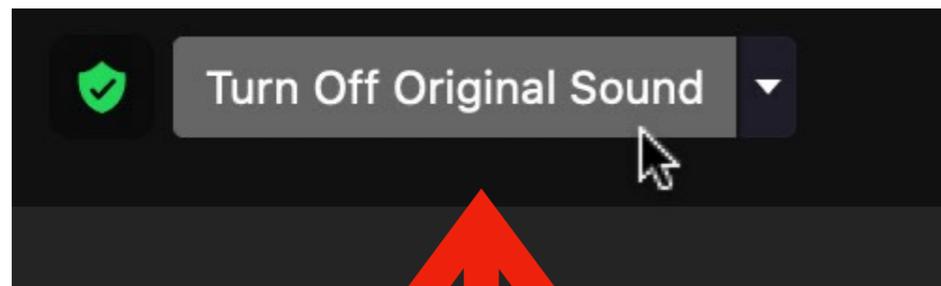
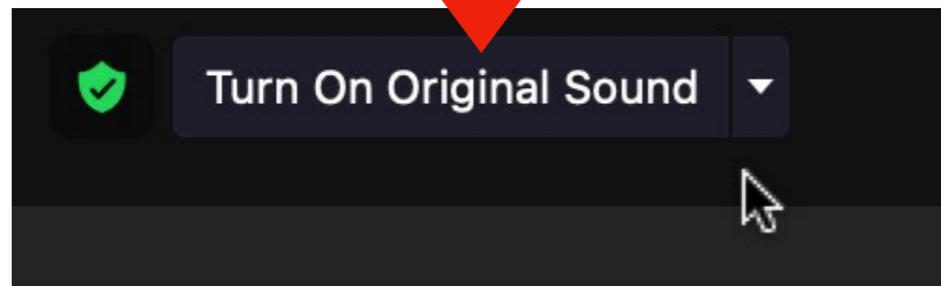
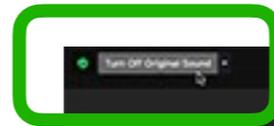
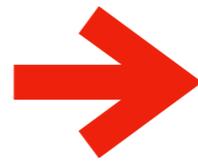


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QUICK CHECK:

Once these settings are done, when you go into a session, you should see an option to preserve the original sound quality from your microphone.

If it says Turn on Original Sound:
Click it to turn high quality **ON**



If it says Turn **OFF** Original Sound then **it's already turned ON** so leave it set like that!

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