

Web Audio Codelab #5

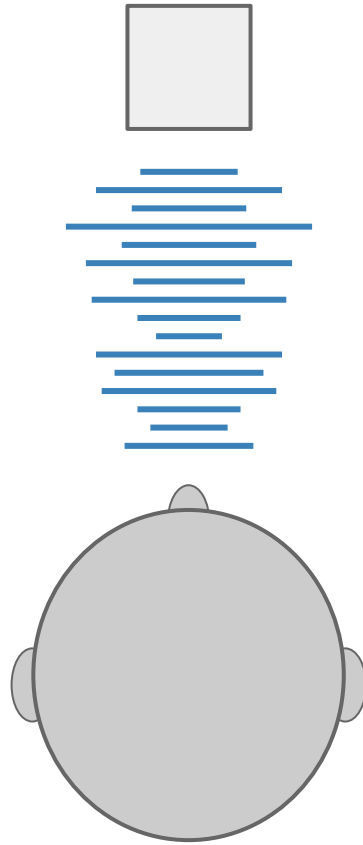
Spatialization

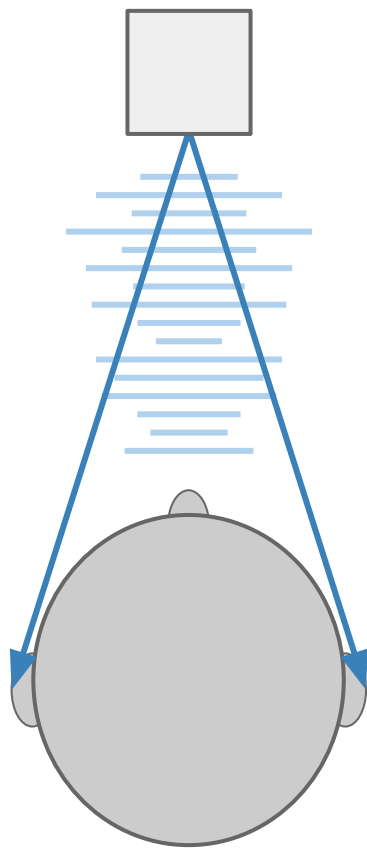
Music 220A Summer 2021

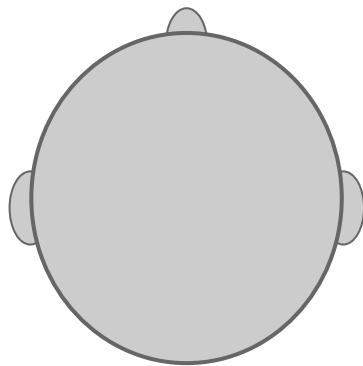
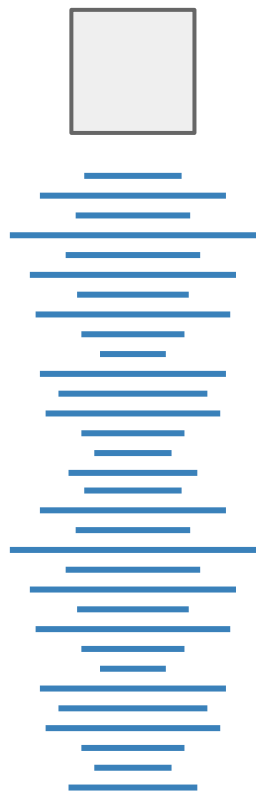
Spatialization in Web Audio

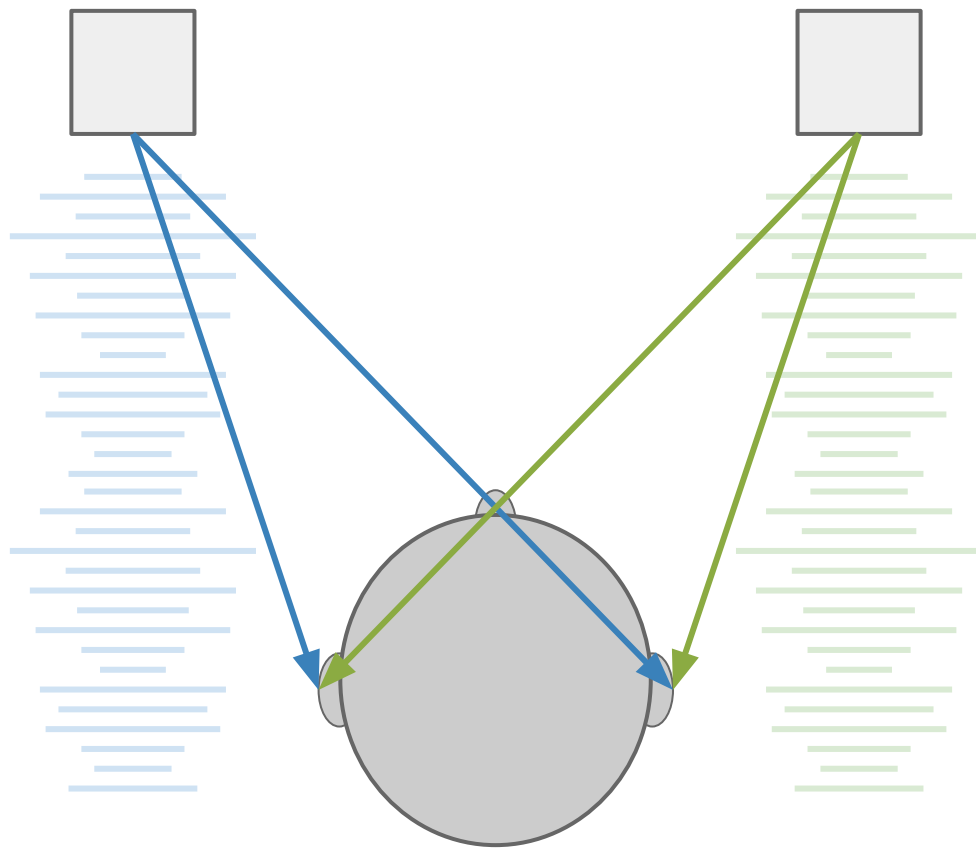
- StereoPannerNode (2D)
- PannerNode (3D)
- Ambisonics via ConvolverNode (3D)

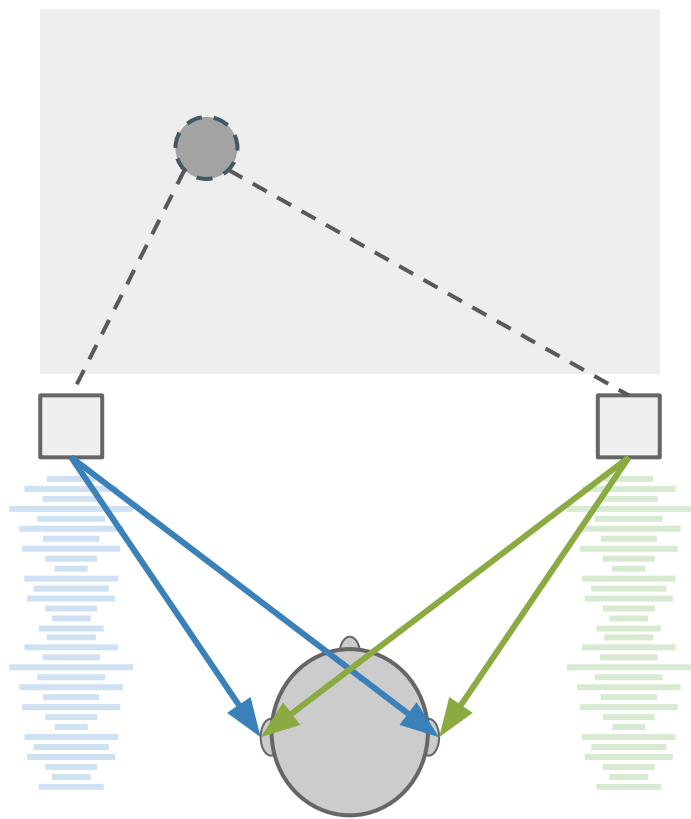
Stereo Panning (2D)












```
const context = new AudioContext();
const bufferSource =
    new AudioBufferSourceNode(context, {buffer; audioBuffer});
const stereoPanner = new StereoPannerNode(context);
bufferSource.connect(stereoPanner).connect(context.destination);

const now = context.currentTime;
stereoPanner.pan.setValueAtTime(-1.0, now);
stereoPanner.pan.linearRampToValueAtTime(1.0, now + 3.0);
bufferSource.start();
```

HRTF Panning (3D)





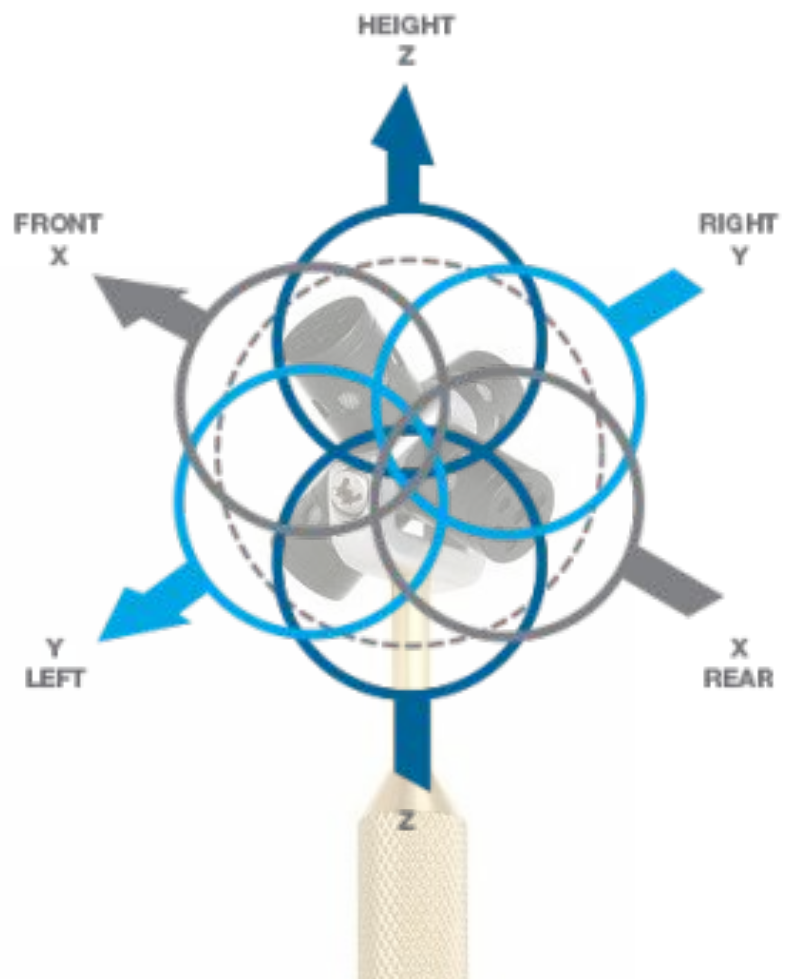
```
const context = new AudioContext();
const bufferSource =
    new AudioBufferSourceNode(context, {buffer: audioBuffer});
const panner = new PannerNode(context);
bufferSource.connect(panner).connect(context.destination);

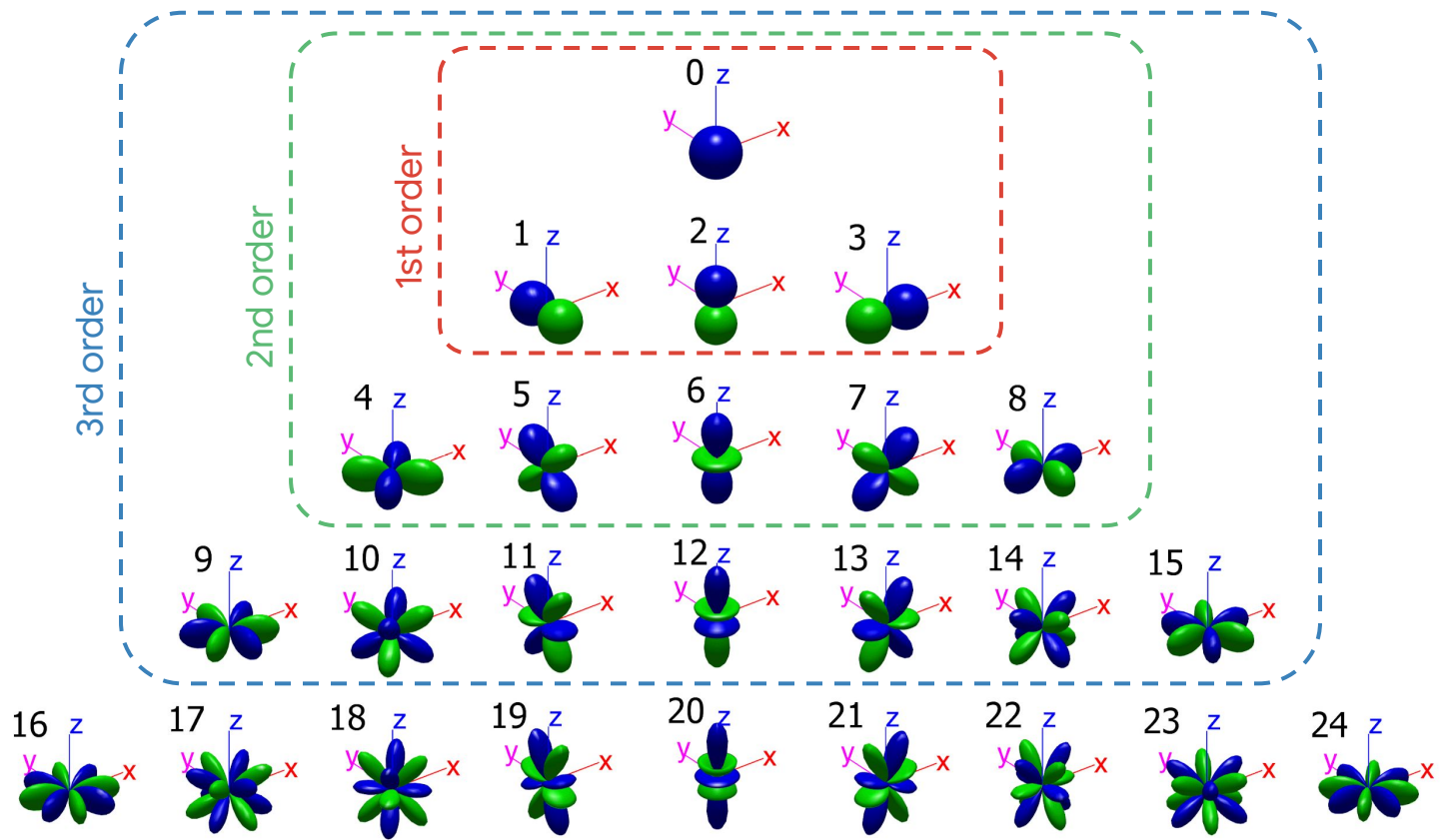
panner.panningModel = 'HRTF';

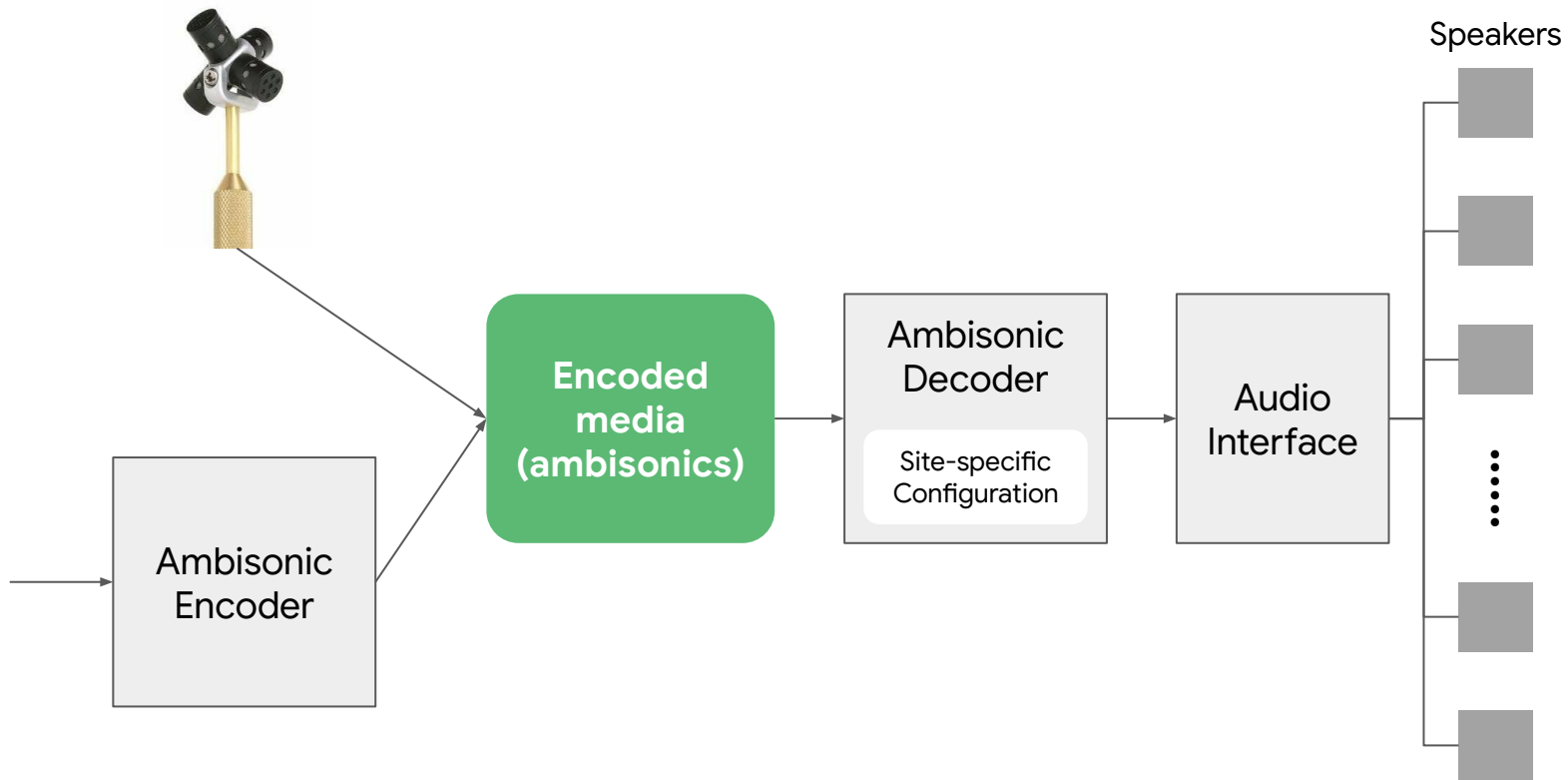
const later = context.currentTime + 3.0;
panner.positionX.linearRampToValueAtTime(-1.0, later);
panner.positionY.linearRampToValueAtTime(1.0, later);
panner.positionZ.linearRampToValueAtTime(1.0, later);
bufferSource.start();
```

Ambisonics



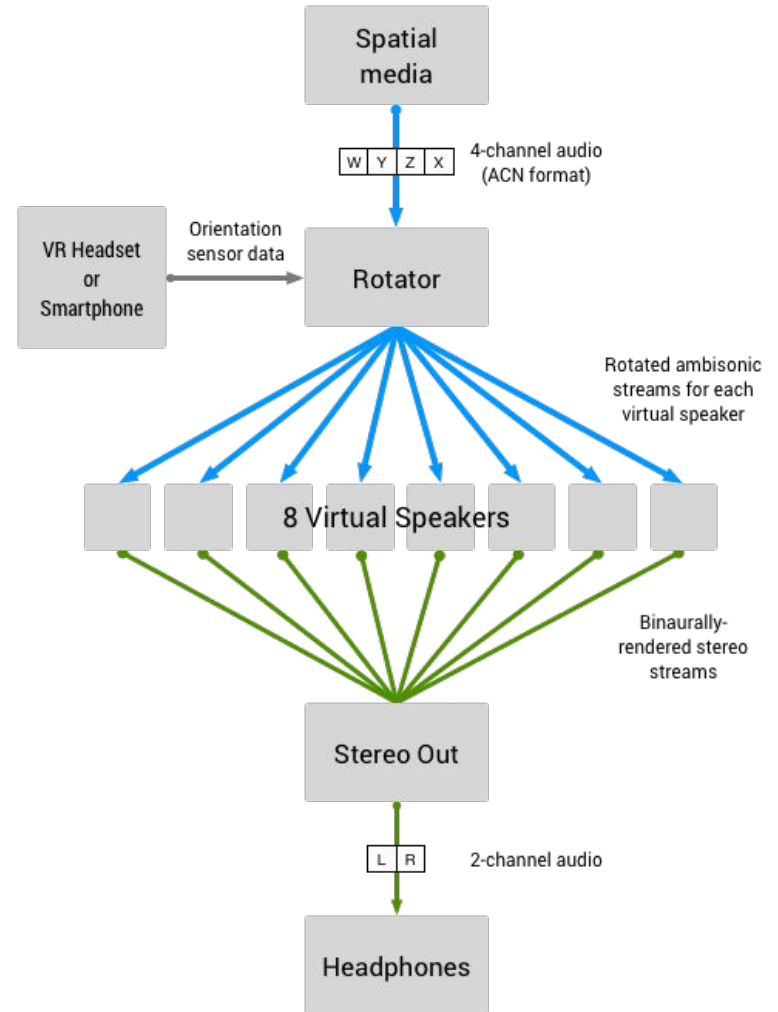






Omnitone

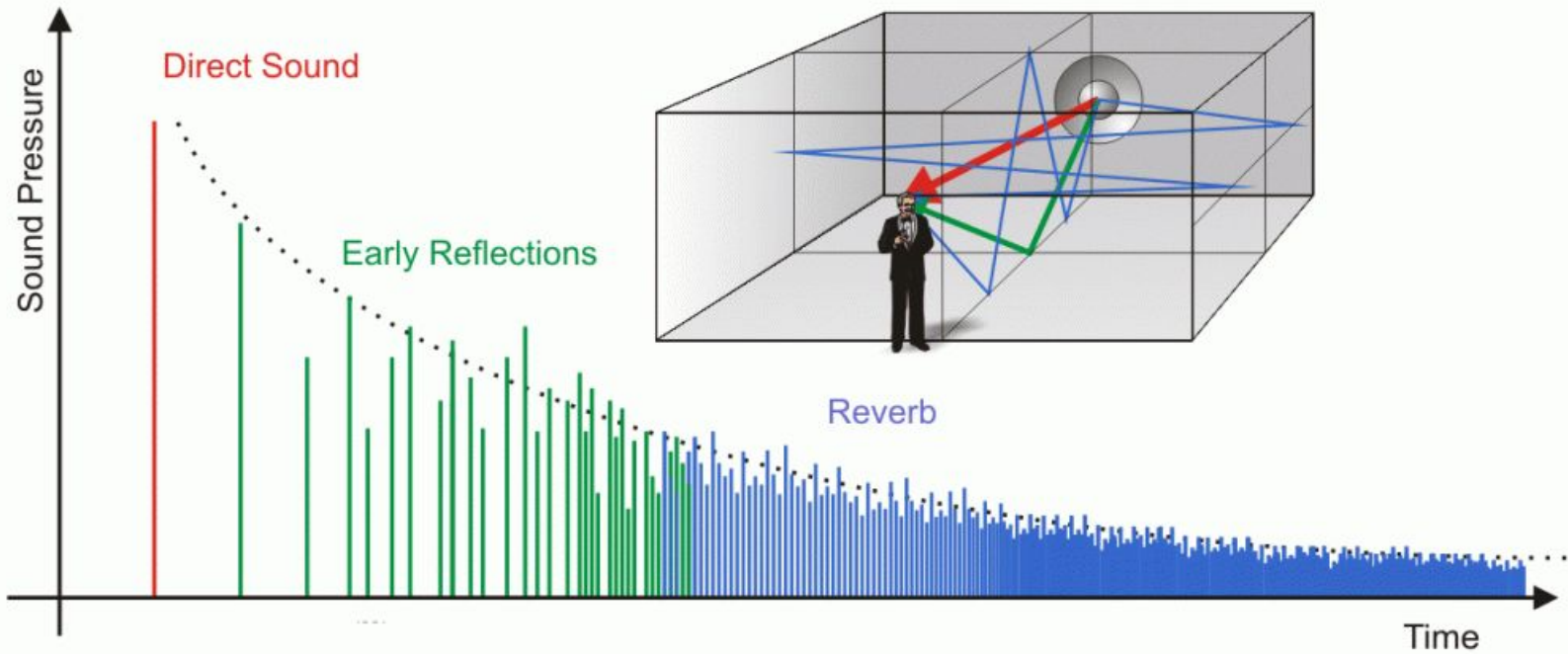
Ambisonics on the web



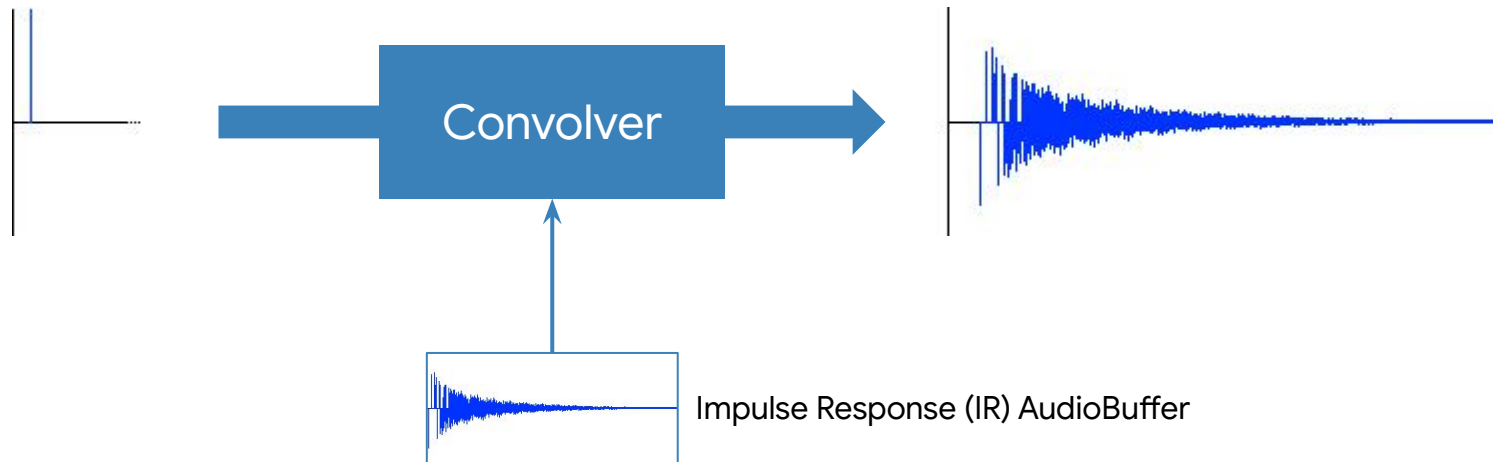
<https://opensource.googleblog.com/2016/07/omnitone-spatial-audio-on-web.html>

Convolution





ConvolverNode



[Music 220A examples](#)

[Omnitone](#)

[Resonance Web SDK](#)

Examples:

Spatialization