AudioBooth

Room impulse response (RIR) data were recorded defining the acoustic transfer function between 17 loudspeakers, at different heights, clumped on a geodesic sphere structure, and 52 microphones. 48 microphones were disposed in a double concentric circular form, whereas other 4 characterised a sound-field microphone. Each RIR is made of 65536 samples at a sampling frequency of 48 kHz. The dataset was captured at the University of Surrey's CVSSP AudioBooth, in July 2015. It includes metadata describing all microphone and loudspeaker positions, and the room size.

This dataset is composed by two files: one refers to the double circular array of microphones, and it is stored in the standard .SOFA format; the other one is a .wav, and it refers to the sound-field microphone recordings. Metadata are encoded directly in to the SOFA file, but reported in a .txt file together with the .wav. A description of the recording setup is provided below.

Considering the centre of the circular microphone array (i.e. it also coincides with the soundfield microphone position) as the centre of the Cartesian coordinate system:

- The circular microphones array is oriented to have the microphones labelled as 1 and 25 at the front to the loudspeaker labelled as 1. The other microphones are labelled counterclockwise. They all have the same height which is equal to 0. The soundfield microphone is placed at the point (0;0;0).
- The first nine loudspeakers lie at the points of coordinates:

	Ls1	Ls2	Ls3	Ls4	Ls5	Ls6	Ls7	Ls8	Ls9
X(m)	0	0.987	1.598	1.598	0.763	-0.763	-1.598	-1.598	-0.987
Y(m)	1.680	1.359	0.519	-0.519	-1.497	-1.497	-0.519	0.519	1.359
Z(m)	0	0	0	0	0	0	0	0	0

- The loudspeakers labelled between 10 and 17 are at different elevations. Their coordinates are:

	Ls10	Ls11	Ls12	Ls13	Ls14	Ls15	Ls16	Ls17
X(m)	0.745	1.206	-1.206	-0.745	0.855	1.384	-1.384	-0.855
Y(m)	1.026	-0.392	-0.392	1.026	1.177	-0.450	-0.450	1.177
Z(m)	0.880	0.880	0.880	0.880	-0.760	-0.760	-0.760	-0.760

- The floor is at z=-1.02m, the ceiling at z=1.10m. The four walls are positioned at: y=2.05m, y=-2.93m, x=2.04m, and x=-2.07m.

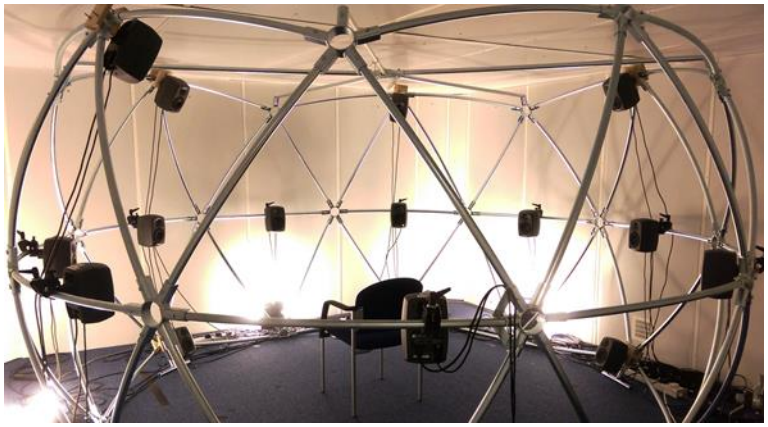

Figure 1 The AudioBooth.