

An Anechoic Recording of Cicero's 3rd Cataline Oration: Italian, Latin and German

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June 4, 2019





Figure 1: Speaker Adriano Evangelisti during the recording session in the anechoic chamber of the TU Berlin.

General Information

This data set contains three anechoic recordings of an excerpt of Cicero's 3rd Cataline Oration in Italian, Latin and German language. The audio recordings were made as part of *Analogue Storage Media – Auralisation of Archaeological Spaces*, a project at the *Image Knowledge Gestaltung Cluster of Excellence* at Humboldt Universität zu Berlin.

The Italian and Latin versions of the speech were presented by the actor and Italian native speaker Adriano Evangelisti using a translation by Naomi Allotta. The German version of the speech was translated by Manfred Fuhrmann¹ and presented by the actor Boris Freytag. The audio recordings were made in the anechoic chamber of the TU Berlin.

This documentation focuses on the content of the data set as well as the recording procedure and a frequency analysis of the signals. If you use this data set please cite:

Christoph Böhm, Felicitas Fiedler, Stefan Weinzierl, Erika Holter, Susanne Muth, Una U. Schäfer, Sebastian Schwesinger (2019): *An Anechoic Recording of Ciceros 3rd Cataline Oration: Italian, Latin and German*. DOI: <http://dx.doi.org/10.14279/depositonce-8536>

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¹Cicero, M. and Fuhrmann, M. (Ed.) (2011). *Die Catilinarischen Reden*. Lateinisch - Deutsch. Berlin, Boston: De Gruyter (A).

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Data base description

The data set includes the Italian, Latin and German speech as Wave files. The complete file structure is shown in Table 1.

The anechoic audio recordings are ready to be used for auralizations. The recorded speech signals are raw recordings, digitally edited but without further sound processing.

Table 1: File structure

Category	Microphone	File	Format
Audio	KM 130	Cicero.3rd.Cataline.Oration.Italian.wav	WAV, Mono, 32 Bit float, 48 kHz
Audio	KM 130	Cicero.3rd.Cataline.Oration.Latin.wav	WAV, Mono, 32 Bit float, 48 kHz
Audio	KM 130	Cicero.3rd.Cataline.Oration.German.wav	WAV, Mono, 24 Bit, 48 kHz

Recording Setup

The three versions of Cicero's speech were recorded in the anechoic chamber of the TU Berlin. The chamber has a volume of 1070 m³ and a lower frequency limit of 63 Hz. A Neumann KM 130 omnidirectional microphone was used at a distance of 1 m to the speaker's mouth. With an RME Fireface UFX the signals were A/D converted, amplified and recorded. In addition, the sound pressure level was recorded with a calibrated NTI level meter at the same distance to the speaker.

Spectrum Analysis

Subsequently, the octave and third octave band levels of the anechoic speech recordings were calculated. The indicated levels refer to the reference level recorded with the NTI level meter. Tables 2 to 7 on the next pages show the unweighted octave and third octave levels, as well as the unweighted and the A-weighted sum level. Corresponding plots are shown in Figures 2 to 7.

Table 2: Octave band and sum levels, Italian speech

Frequency in Hz	125	250	500	1000	2000	4000	8000	sum level in dB(Z)	sum level in dB(A)
SPL in dB	61.67	80.15	84.38	84.25	81.13	73.91	68.83	89.07	87.92

Table 3: Third octave band levels, Italian speech

Freq. in Hz	100	125	160	200	250	315	400	500	630	800	1000
SPL in dB	43.68	51.15	61.43	70.68	76.87	76.86	76.42	81.31	80.38	76.94	79.45
Freq. in Hz	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	
SPL in dB	81.52	79.65	74.23	72.37	70.24	70.05	66.98	62.60	66.09	62.83	

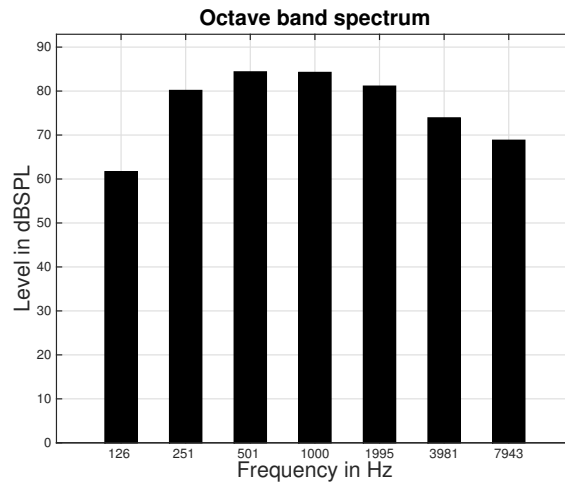


Figure 2: Octave band levels, Italian speech

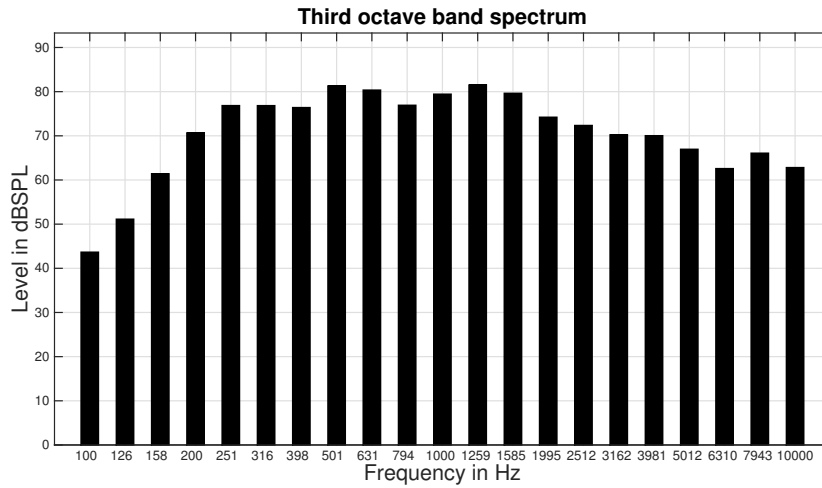


Figure 3: Third octave band levels, Italian speech

Table 4: Octave band and sum levels, Latin speech

Frequency in Hz	125	250	500	1000	2000	4000	8000	sum level in dB(Z)	sum level in dB(A)
SPL in dB	62.85	82.30	84.18	84.63	81.40	74.78	68.69	89.54	88.23

Table 5: Third octave band levels, Latin speech

Freq in Hz	100	125	160	200	250	315	400	500	630	800	1000
SPL in dB	44.02	51.98	62.66	72.31	78.78	79.34	77.08	80.12	80.85	77.30	79.98
Freq. in Hz	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	
SPL in dB	81.81	79.33	76.12	72.66	72.13	70.47	65.94	63.46	65.62	62.35	

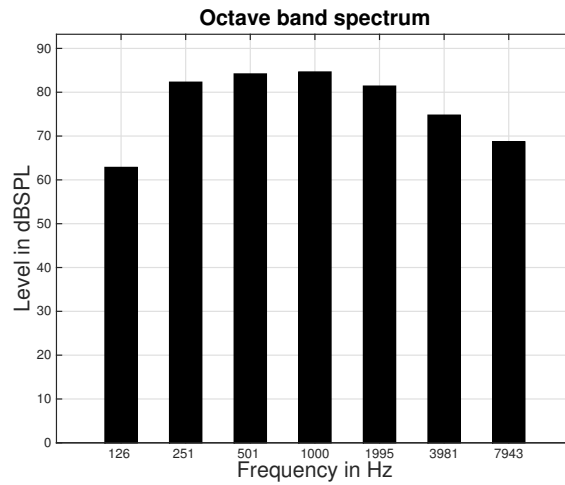


Figure 4: Octave band levels, Latin speech

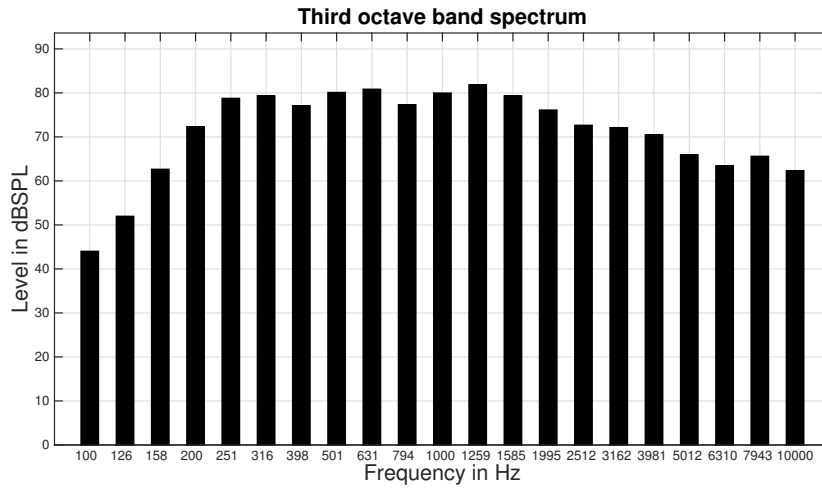


Figure 5: Third octave band levels, Latin speech

Table 6: Octave band and sum levels, German speech

Frequency in Hz	125	250	500	1000	2000	4000	8000	sum level in dB(Z)	sum level in dB(A)
SPL in dB	54.89	79.32	86.79	85.30	84.90	79.59	67.38	91.17	90.43

Table 7: Third octave band levels, German speech

Freq. in Hz	100	125	160	200	250	315	400	500	630	800	1000
SPL in dB	38.61	45.55	54.49	63.90	72.69	78.38	75.70	78.77	85.90	77.96	78.29
Freq. in Hz	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	
SPL in dB	83.54	82.18	79.39	78.59	78.85	72.23	61.24	64.56	62.61	59.58	

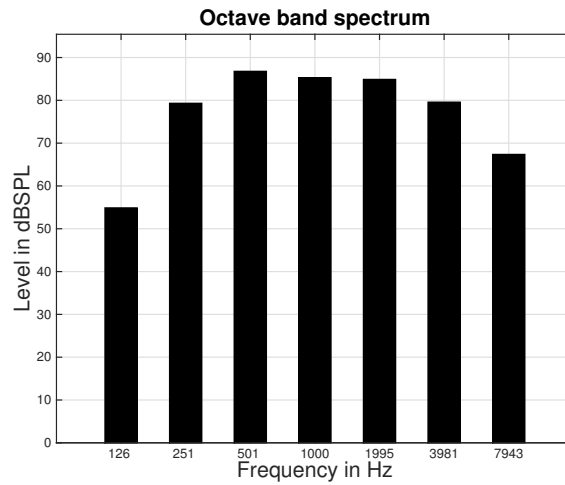


Figure 6: Octave band levels, German speech

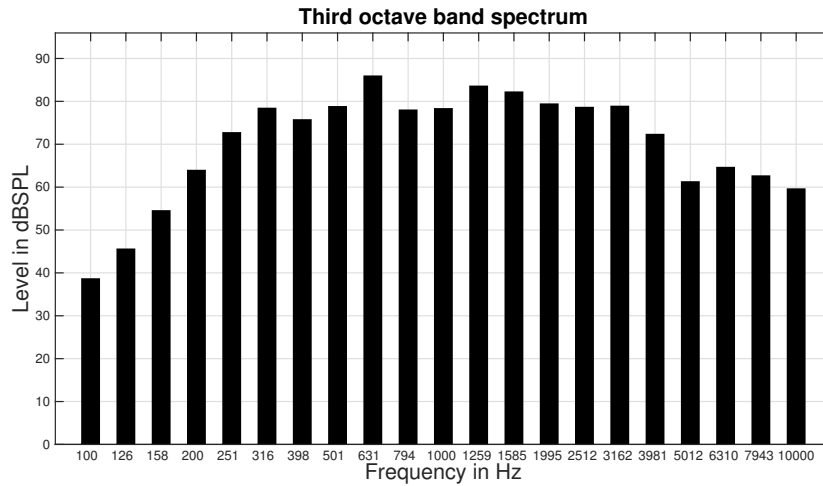


Figure 7: Third octave band levels, German speech

The authors would like to thank Adriano Evangelisti and Boris Freytag for the productive collaboration.