Sound and movie examples – issue 19(1)

Sound and Movie examples from issue 19(1) can already be found online at the journal's website: www.journals.cambridge.org/OSO. Examples for the whole volume will be supplied on DVD with issue 19(3) when it is published in late 2014.

Natasha Barrett and Karen Mair

Aftershock: A science–art collaboration through sonification

26 Sound examples and 3 Movie examples

Sound example 1: Numerical simulations data, all events sonified over 20 seconds by Natasha Barrett (2011) – 0′20″

Sound example 2: Numerical simulations data, magnitudes above 0.7, split into five magnitude bands, 10-minute sonification, first 60 seconds by Natasha Barrett (2011) – 1′00″

Sound example 3: Numerical simulations data, 10-minute sonification with sine tone as input, first 15 seconds by Natasha Barrett (2011) – 0′15″

Sound example 4: Numerical simulations data, 10-minute sonification with sine tone as input, 15 seconds after 4 minutes by Natasha Barrett (2011) – 0′15″

Sound example 5: Emissions data, with time-line moved and spatialised in interactive space, extract by Natasha Barrett (2011) – 1′15″

Sound example 6: Input sound for sound example 7 by Natasha Barrett (2011) – 0′01″

Sound example 7: Numerical simulations data, all events sonified over 10 minutes, first 30 seconds by Natasha Barrett (2011) – 0′30″

Sound example 8: Numerical simulations data, five magnitude bands sonified to 10 minutes, first band, first 10 seconds by Natasha Barrett (2011) – 0′10″

Sound example 9: Numerical simulations data, five magnitude bands sonified to 10 minutes, second band, first 10 seconds by Natasha Barrett (2011) – 0′10″

Sound example 10: Numerical simulations data, five magnitude bands sonified to 10 minutes, third band, first 10 seconds by Natasha Barrett (2011) – 0′10″

Sound example 11: Numerical simulations data, five magnitude bands sonified to 10 minutes, fourth band, first 10 seconds by Natasha Barrett (2011) – 0′10″

Sound example 12: Numerical simulations data, five magnitude bands sonified to 10 minutes, fifth band, first 10 seconds by Natasha Barrett (2011) – 0′10″

Sound example 13: Numerical simulations 10 minute version used in *Crush*, first 90 seconds by Natasha Barrett (2011) – 1′30″

Sound example 14: Particle 10631066 sonified over 20 seconds, virtual microphone position in the centre of the dataset space by Natasha Barrett (2011) – 0′20″

Sound example 15: Particle 10631066 sonified over 20 seconds, space scaled to that of the particle's spatial motion, virtual microphone position in the centre of this motion by Natasha Barrett (2011) – 0′20″

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Sound example 16: Six particles mixed together, spatial dimension and x–y microphone location at the average of the six particles, z microphone location placed centrally for individual particles by Natasha Barrett (2011) – 0′20″

Sound example 17: Example 8.3 scaled to 100 seconds, first 70 seconds by Natasha Barrett (2011) – 1′10″

Sound example 18: Mix 30 particles' cluster changes sonification using input from Sound example 19 by Natasha Barrett (2011) – 0′57″

Sound example 19: Input sound for example 18 by Natasha Barrett (2011) – 0′05″

Sound example 20: Trajectory of particle 4531543 at 20 seconds' scaling with cluster breakages mixed in by Natasha Barrett (2011) – 0′20″

Sound example 21: Acoustic emissions sandstone waveform transposed down 10 octaves by Natasha Barrett (2011) – 0′14″

Sound example 22: Acoustic emissions basalt waveform transposed down 10 octaves by Natasha Barrett (2011) – 0′12″

Sound example 23: Acoustic emissions granite waveform transposed down 10 octaves by Natasha Barrett (2011) – 0′13″

Sound example 24: Acoustic emissions granite transposed and spatialised, with fracture events by Natasha Barrett (2011) – 0′25″

Sound example 25: Acoustic emissions data sonified at a 33-second duration with alternative input sound by Natasha Barrett (2011) – 0′33″

Sound example 26: Acoustic emissions composition using sonification and scientific ultrasonic recordings by Natasha Barrett (2011) – 3′40″

Movie example 1: Numerical simulations, granular debris model. The sound addresses fracture events above a magnitude value of 0.7 in a possible range of 0–1 by Karen Mair (2013) – 0′20″

Movie example 2: Animation of Figure 4, numerical simulations tracing 6 particles and their parent grains. Sound track is from Sound example 15 where space is scaled to that of the particle's spatial motion and refers to the light blue particle on the left by Karen Mair (2013) – 0′21″

Movie example 3: Animation showing locations of laboratory-induced acoustic emissions (and hence micro-fractures) with time by Alex Schubnel, with permission (2007) – 0′06″

Mark Ballora

Sonification, Science, and Popular Music: In search of the 'wow'

14 Sound examples

Sound example 1: The seven Schumann resonance frequencies, transposed up three octaves. Each is synthesised as a sine oscillator and filtered noise combination. They are panned evenly across the stereo field. The 5 per cent variation found with each frequency is simulated by slow, linear sample and hold low-frequency oscillators, applied to each oscillator-noise combination's pitches and the pan positions. – 3′06″

Sound example 2: Scale created from the ratios of the nine planets' distances from the sun, transposed by a series of octaves until they all fall within an octave span, between 1/1 and 2/1. The nine pitches are played with a Karplus-Strong plucked string sound – 0′06″.

Sound example 3: The nine planetary scale pitches are played repeatedly at rates proportional to their relative orbit times. A whirring sound simulates the motion around the sun, and a low buzz represents their relative inclinations. They are heard in the sequence of Earth, Venus, Mercury, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto – 2′29″.

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Sound example 4: Audification of earthquake centred in Virginia on 23 August 2011, data measured at Standing Stone, PA – 0′03″.

Sound example 5: Audification of earthquake centred in Virginia on 23 August 2011, data measured at Albuquerque, NM – 0′03″.

Sound example 6: Audification of earthquake centred in Virginia on 23 August 2011, data measured at College Outpost, AK – 0′03″.

Sound example 7: Sonification of earthquake centred in Virginia on 23 August 2011, data measured at Fredericksburg, Observatory, Corbin, VA. Data values reflect vertical displacements of earth's surface, and are mapped to pitch, filter cut-off frequency, and pan position – 0′41″.

Sound example 8: Sonification of Golden Gate Bridge motion during earthquake occurring on 17 August 1999. Displacement is measured on three axes: up–down, north–sound and east–west. Sound has 'rumble' and 'sizzle' components, somewhat like a gong. Up–down data values are mapped to pitch, tremolo rate and tremolo amplitude. North–south values are mapped to the volume of the sizzle and the sizzle's centre frequency. East–west values are mapped to the filter's bandwidth, the reverb level, and the pan position of the sound – 0′44″.

Sound example 9: Sonification of Golden Gate Bridge motion under normal conditions, measured 22 July 2011. The same sound and mappings are applied as those heard in Sound example 8 – 2′33″.

Sound example 10: Sonification of a portion of the spectrum of galaxy NGC1300. A gong-like sound is used in an attempt to simulate a distant wind-chime. The intensity values are mapped to pitch, inter-chime time and volume – 0′51″.

Sound example 11: Sonification of a portion of the spectrum of galaxy NGC4414. A wood-like sound is used in an attempt to simulate a distant wind-chime. The intensity values are mapped in the same fashion as with Sound example 10 – 0′44″.

Sound example 12: Sonification of a portion of the spectrum of galaxy NGC4594 (aka Messier 104, the 'Sombrero galaxy'). A whispery chime-like sound is used in an attempt to simulate a distant wind-chime. The intensity values are mapped in the same fashion as with Sound example 10 – 0′42″.

Sound example 13: Sonification of a portion of the spectrum of galaxy NGC5194 (aka Messier 051a). A whispery sparkle sound is used in an attempt to simulate a distant wind-chime. The intensity values are mapped in the same fashion as with Sound example 10 – 0′16″.

Sound example 14: Sonification of a portion of the spectrum of galaxy NGC5866. A bell-like sound is used in an attempt to simulate a distant wind-chime. The intensity values are mapped in the same fashion as with Sound example 10 – 0′33″.

Ryo Ikeshiro

Audification and Non-Standard Synthesis in *Construction in Self*

5 Sound examples

All sound examples from *Construction in Self* (2009).

Sound example 1. One section from the work – 1′05″

Sound example 2. Audification of Figs. 1 to 12 – 0′25″

Sound example 3. Audification of Figs. 1 to 12 transposed up two octaves – 0′25″

Sound example 4. Audification of Figs. 13 to 24 – 0′25″

Sound example 5. Audification of Figs. 13 to 24 transposed up two octaves – 0′25″

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