

# Geysir

for seven pianists and electronics

Christopher Luna-Mega (2016/2019)

This piece is a study of the acoustic properties of an Icelandic geyser recorded 180 miles East of Reykjavik in the valley of Haukadalur. Its complex harmonies, dynamics and rhythms shift perpetually and in subtle ways. If listened to as a background, the sound may appear to be static. With a focused listening, musical shapes emerge from the sound mass. With the intention of musically assimilating into the sonic characteristics of the geyser, the score for seven pianists and electronics translates its harmonic, dynamic and rhythmic activity, from the lowest to highest register of the piano. Each pianist focuses on an octave and is projected through a speaker, which results in a diffused sound around the audience. The electronics present the geyser in its original form, divided into seven tracks, one track per octave, in order to be fused with the pianos and spatialized around the hall.

## Performance notes

### Time

The piece must be performed with a stopwatch. Each bar is 4 seconds long and always includes a time cue:

0:00 0:04

*pp* *p* *mp* *p*

### Pitch (categories of predominance)

Until a new box or silence suggest a change, perform the pitches from the box considering the following categories:

- High presence
- ◊ Medium presence
- × Low presence

### Rhythm (categories of saturation)

Each boxed pitch material should always be performed using either of the following rhythmic categories. The symbol  $\sphericalangle$ , indicates all rhythms performed must be irregular, never repeating pulses or rhythms):

	not more than one note per two seconds		not more than four notes per second
	not more than one note per second		not more than eight notes per second
	not more than two notes per second		as many notes as possible per second

## Technical requirements

There are several options for performance of this piece, considering the availability of resources in the performance space. The options range from an abundant resource scenario to a simple setup. The following is the setup used for the premier of the piece in Old Cabell Hall, at the University of Virginia, in October 2016.

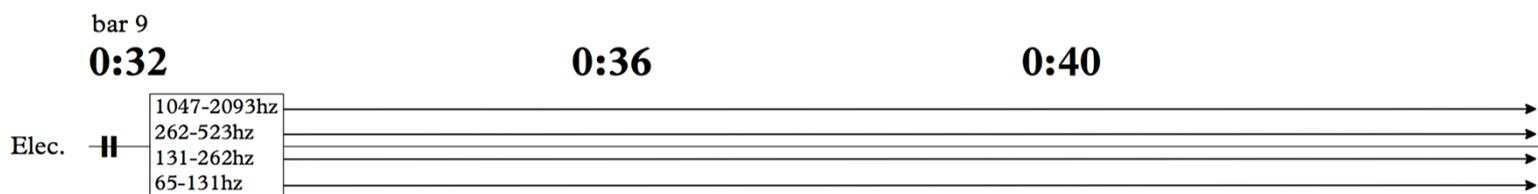
- 1 piano on stage; 3 pianos outside the concert hall, in practice rooms (sound proof) and telematically amplified in the hall.
- 7 microphones (assortment of cardioid condenser microphones, among them AKG 414 or similar)
- XLR cables
- Stage snake (minimum 8-channel input)
- 7 microphone stands
- 7 loudspeakers (placed surrounding the audience)
- Mixing board
- Laptop with a Digital Audio Workstation (Logic, Reaper, etc.)

## Electronics

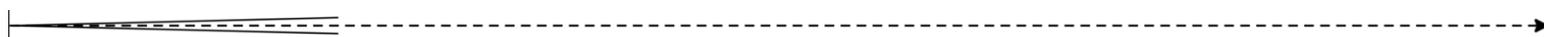
The electronics of the piece are seven tracks with seven frequency strata of the field recording of the geyser from which the piano parts are derived. Each track corresponds to the frequency range of each of the piano parts. The tracks are the following:

2093-4186hz
1047-2093hz
523-1047hz
262-523hz
131-262hz
65-131hz
20-65hz

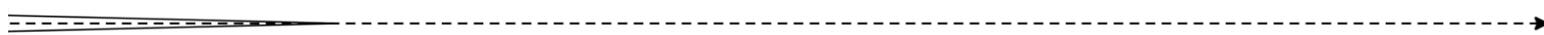
The electronic performer follows the score at the mixer board, fading the seven tracks in and out and balancing their dynamics with those of the pianists. The dynamics of the geyser sounds and the live performers must always be balanced. The main notations are the following:



Sounding frequency band tracks throughout until otherwise notated



Crescendo throughout the dotted arrow



Diminuendo throughout the dotted arrow until track fade out

\*The electronic tracks will be provided for performance upon request.

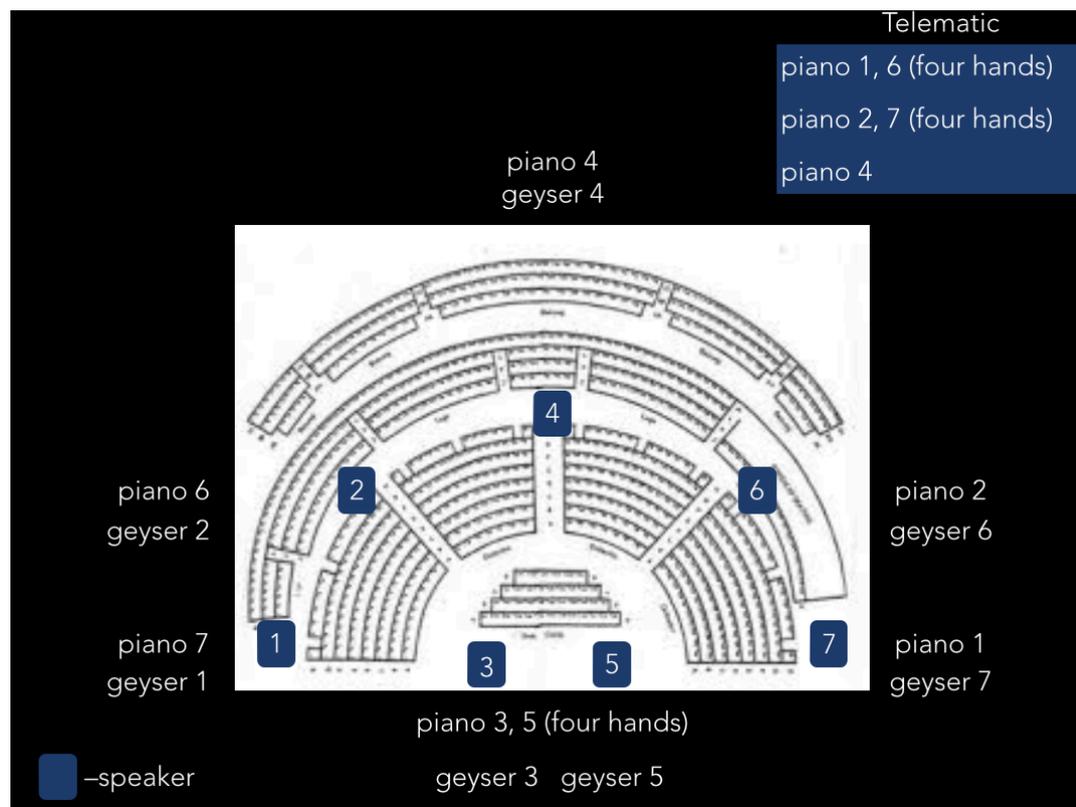
## Setup

- Three of the four pianos are played four hands. The distribution of the parts are the following:

Piano parts 1 and 6	Offstage piano 1
Piano parts 2 and 7	Offstage piano 2
Piano part 4	Offstage piano 3
Piano parts 3 and 5	Stage piano

- Microphones must be as close to the strings as possible, in order to pick the minimum amount of sound from the pianist at the opposite end
- Routing of Piano parts and Electronics to loudspeakers (see diagram below):

Geyser 1 (track 1 of the electronics) / Piano 7	Speaker 1
Geyser 2 / Piano 6	Speaker 2
Geyser 3 / Piano 5	Speaker 3
Geyser 4 / Piano 4	Speaker 4
Geyser 5 / Piano 3	Speaker 5
Geyser 6 / Piano 2	Speaker 6
Geyser 7 / Piano 1	Speaker 7



# Geysir

for seven pianists and electronics

Christopher Luna-Mega (2016)

0:00 0:04

Piano 7

0:04

*ppp* *pp*

Electronics

**Geysir frequency bands**

2093-4186hz	→
1047-2093hz	→
523-1047hz	→
262-523hz	→
131-262hz	→
65-131hz	→
20-65hz	→

bar 3

0:08 0:12 0:16

Pno. 7

0:16

*mp*

Elec.

1047-2093hz	→
262-523hz	→
131-262hz	→

bar 6

0:20 0:24 0:28

Pno. 7

0:24

*mp*

Elec.

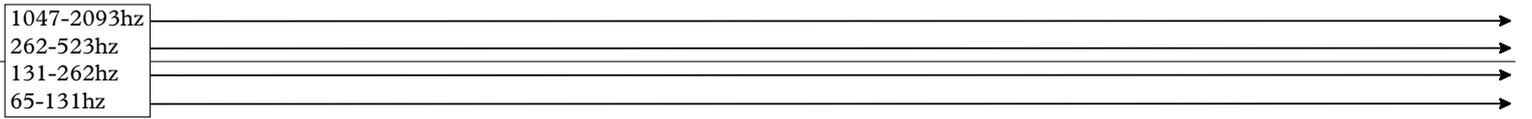
1047-2093hz	→
262-523hz	→
131-262hz	→
65-131hz	→

bar 9

0:32

0:36

0:40

Elec. 



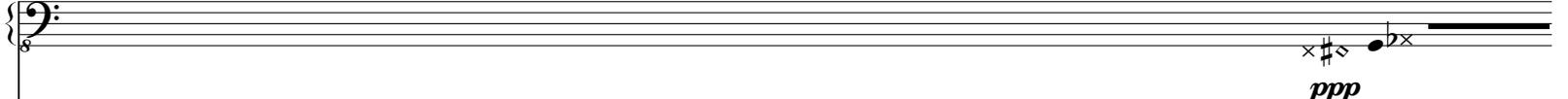
bar 12

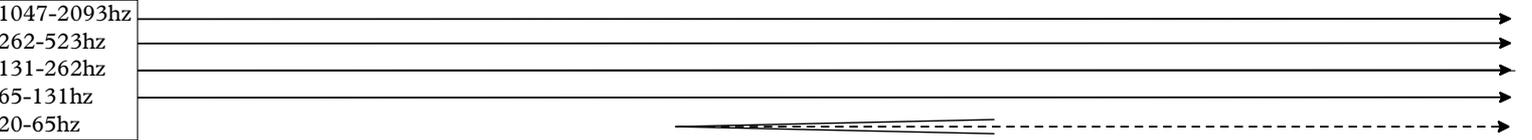
0:44

0:48

0:52



Pno. 1 

Elec. 



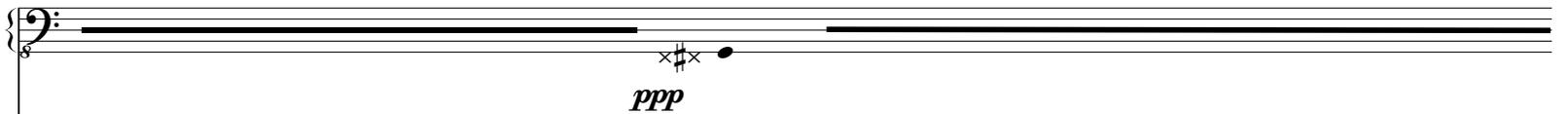
bar 15

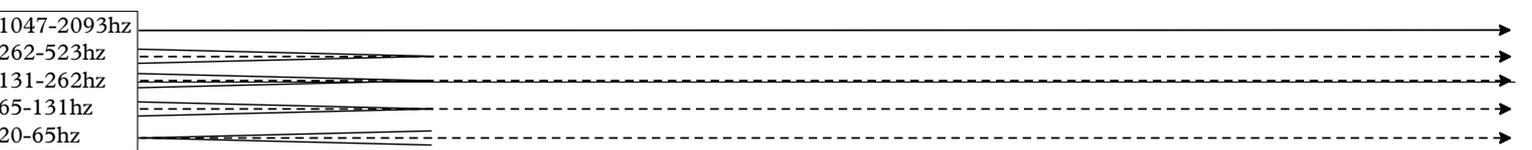
0:56

1:00



1:04

Pno. 1 

Elec. 



bar 18

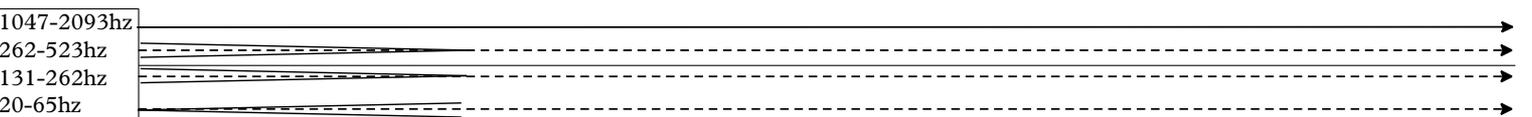
1:08

1:12

1:16

Pno. 7 

Pno. 1 

Elec. 

bar 21

1:20

1:24

1:28

Pno. 7

Pno. 2

Pno. 1

Elec.

1047-2093hz  
20-65hz

*p* *pp*

*pp* *ppp*

bar 24

1:32

1:36

1:40

Pno. 7

Pno. 2

Pno. 1

Elec.

1047-2093hz  
65-131hz  
20-65hz

*p* *mp*

*p* *pp* *mp* *ppp* *pp* *p*

bar 27

1:44

1:48

1:52

Pno. 2

Pno. 1

Elec.

65-131hz  
20-65hz

*ppp* *pp* *p* *pp*

4 bar 30  
**1:56** **2:00** **2:04**

Pno. 7

Pno. 2

Pno. 1

Elec.

*p* *ppp* *pp* *mf* *p* *pp* *mp* *pp* *mp* *pp* *mf*

65-131hz  
20-65hz

bar 33  
**2:08** **2:12** **2:16**

Pno. 3

Pno. 2

Pno. 1

Elec.

*mp* *p* *mp* *mp* *pp* *mp* *ppp* *mp* *p*

131-262hz  
65-131hz  
20-65hz

bar 36  
**2:20** **2:24** **2:28**

Pno. 3

Pno. 2

Pno. 1

Elec.

*p* *f* *ppp mp* *pp*

131-262hz  
65-131hz  
20-65hz

bar 39  
2:32                      2:36                      2:40                      2:44

Pno. 3

Pno. 2

Pno. 1

Elec.

131-262hz  
65-131hz  
20-65hz



bar 43  
2:48                      2:52                      2:56                      3:00

Pno. 4

Pno. 3

Pno. 2

Pno. 1

Elec.

262-523hz  
131-262hz  
65-131hz  
20-65hz

bar 47

3:04

3:08

3:12

3:16

Pno. 4

Pno. 3

Pno. 2

Pno. 1

Elec.

262-523hz
131-262hz
65-131hz
20-65hz

*mp*

*ppp*

*crescendo*

*p*

*ppp*

*ppp*

*pp*

*ppp*

*pp*

*ppp*



bar 51

3:20

3:24

3:28

Pno. 5

Pno. 4

Pno. 3

Pno. 2

Pno. 1

Elec.

262-523hz
131-262hz
65-131hz
20-65hz

*ppp*

*pp*

*ppp*

*p*

*mf*

*p*

*pp*

*mp*

*mp*

*pp*

*ppp*

*p*

bar 54

3:32

3:36

3:40

7

Piano 5 (Pno. 5): *mf* (3:32-3:36), *mp* (3:36-3:40), *pp* (3:40-3:44), *p* (3:44-3:48)

Piano 4 (Pno. 4): *pp* (3:32-3:36), *pp* (3:36-3:40), *mp* (3:40-3:48)

Piano 3 (Pno. 3): *pp* (3:36-3:48)

Piano 2 (Pno. 2): *pp* (3:32-3:48)

Piano 1 (Pno. 1): *ppp* (3:32-3:36), *p* (3:36-3:40), *ppp* (3:40-3:44), *p* (3:44-3:48)

Elec. (Electric): 523-1047hz, 262-523hz, 131-262hz, 65-131hz, 20-65hz

bar 57

3:44

3:48

3:52

3:56

Piano 6 (Pno. 6): *mp* (3:44-3:48), *mp* (3:52-3:56)

Piano 5 (Pno. 5): *f* (3:44-3:48), *mp* (3:52-3:56), *p* (3:56-4:00), *f* (4:00-4:04), *mp* (4:04-4:08)

Piano 4 (Pno. 4): *mf* (3:44-3:48), *p* (3:48-3:52), *mf* (3:56-4:00)

Piano 2 (Pno. 2): *p* (3:44-3:48), *mp* (3:52-3:56), *pp* (3:56-4:00)

Piano 1 (Pno. 1): *mp* (3:44-3:48), *mp* (3:48-3:52), *ppp* (3:52-3:56), *pp* (3:56-4:00), *mp* (4:00-4:04), *ppp* (4:04-4:08), *mp* (4:08-4:12), *ppp* (4:12-4:16), *p* (4:16-4:20), *ppp* (4:20-4:24)

Elec. (Electric): 523-1047hz, 262-523hz, 131-262hz, 65-131hz, 20-65hz

bar 61

4:00

4:04

4:08

Pno. 7

Musical staff for Pno. 7. It features a treble clef and a whole rest. At the 4:08 mark, there is a musical notation consisting of a quarter note with a sharp sign, followed by a quarter note with a flat sign, and a quarter note with a natural sign. The dynamic marking *p* is placed below the staff.

Pno. 6

Musical staff for Pno. 6. It features a treble clef and a key signature of one sharp (F#). The notation includes a quarter note with a sharp sign, a quarter note with a flat sign, a quarter note with a natural sign, and a quarter note with a flat sign. A dynamic marking *diminuendo* is written below the staff with a dashed line indicating a gradual decrease in volume.

Pno. 5

Musical staff for Pno. 5. It features a treble clef and a whole rest. Dynamic markings are placed below the staff: *pp*, *ff*, *mp*, *p*, *pp*, *f*, and *p*.

Pno. 4

Musical staff for Pno. 4. It features a treble clef. The notation includes a quarter note with a sharp sign, a quarter note with a flat sign, a quarter note with a natural sign, and a quarter note with a flat sign. Dynamic markings are placed below the staff: *f*, *mp*, *p*, and *pp*.

Pno. 3

Musical staff for Pno. 3. It features a bass clef. The notation includes a quarter note with a sharp sign, a quarter note with a flat sign, and a quarter note with a natural sign. Dynamic markings are placed below the staff: *p* and *pp*.

Pno. 2

Musical staff for Pno. 2. It features a bass clef and a whole rest. A dynamic marking *mp* is placed below the staff.

Pno. 1

Musical staff for Pno. 1. It features a bass clef. The notation includes a quarter note with a sharp sign, a quarter note with a flat sign, and a quarter note with a natural sign. A dynamic marking *p* is placed below the staff.

Elec.

Electronic filter frequency bands. A box contains the following frequency ranges: 523-1047hz, 262-523hz, 131-262hz, 65-131hz, and 20-65hz. Five horizontal lines with arrows at the right end represent the filter bands.

bar 64

4:12

4:16

4:20

4:24

Pno. 7

Musical staff for Pno. 7, treble clef. The staff is mostly empty with a thick black line across it. A dynamic marking *pp* is located at the end of the staff.

Pno. 6

Musical staff for Pno. 6, treble clef. It contains a few notes with accidentals and a wavy hairpin. A dashed line is drawn below the staff, and a dynamic marking *ppp* is at the end.

Pno. 5

Musical staff for Pno. 5, treble clef. It contains several notes with accidentals and a wavy hairpin. Dynamic markings *ppp*, *pp*, *p*, and *ppp* are placed below the staff.

Pno. 4

Musical staff for Pno. 4, treble clef. It contains several notes with accidentals and a wavy hairpin. Dynamic markings *ppp*, *pp*, and *ppp* are placed below the staff.

Pno. 3

Musical staff for Pno. 3, bass clef. It contains several notes with accidentals and a wavy hairpin. Dynamic markings *ppp*, *pp*, *ppp*, and *pp* are placed below the staff.

Pno. 1

Musical staff for Pno. 1, bass clef. It contains a few notes with accidentals and a wavy hairpin. Dynamic markings *pp* and *ppp* are placed below the staff.

Elec.

Electronics section with a list of frequency ranges and corresponding horizontal lines with arrows pointing right:

- 2093-4186hz
- 1047-2093hz
- 523-1047hz
- 262-523hz
- 131-262hz
- 65-131hz
- 20-65hz

bar 68

4:28

4:32 4:36

4:40

4:44

Piano parts (Pno. 1-6) and Electric guitar (Elec.) staff. Includes dynamic markings (*pp*, *ppp*) and frequency bands for the electric guitar.



bar 73

4:48

4:52

4:56

5:00

Piano parts (Pno. 1-6) and Electric guitar (Elec.) staff. Includes dynamic markings (*p*, *ppp*, *pp*) and frequency bands for the electric guitar.

bar 77

5:04

5:08

5:12

Pno. 6 *p* *diminuendo*

Pno. 5 *p* *pp* *mp* *ppp*

Pno. 1 *pp* *ppp* *p*

Elec. 

2093-4186hz
1047-2093hz
523-1047hz
262-523hz
131-262hz
65-131hz
20-65hz



bar 80

5:16

5:20

5:24

Pno. 6 *p* *mp* *pp* *mp*

Pno. 5 *p* *mp*

Pno. 3 *pp*

Pno. 2 *mf*

Pno. 1 *pp* *mp*

Elec. 

2093-4186hz
1047-2093hz
523-1047hz
262-523hz
131-262hz
65-131hz
20-65hz

bar 83

5:28

5:32

5:36

Pno. 7

Pno. 6

Pno. 5

Pno. 3

Pno. 2

Pno. 1

Elec.

Piano 7 staff: Treble clef, notes with accidentals and dynamics: *pp*

Piano 6 staff: Treble clef, notes with accidentals and dynamics: *ppp*, *crescendo*

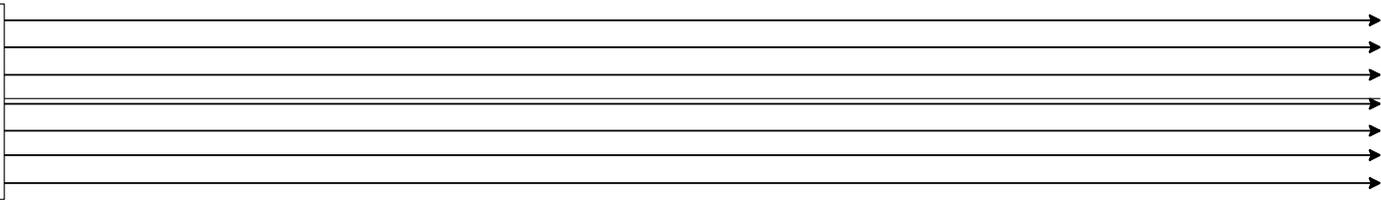
Piano 5 staff: Treble clef, notes with accidentals and dynamics: *p*

Piano 3 staff: Bass clef, notes with accidentals and dynamics: *ppp*, *p*

Piano 2 staff: Bass clef, notes with accidentals and dynamics: *p*

Piano 1 staff: Bass clef, notes with accidentals and dynamics: *pp*

- 2093-4186hz
- 1047-2093hz
- 523-1047hz
- 262-523hz
- 131-262hz
- 65-131hz
- 20-65hz



bar 86

5:40

5:44

5:48

5:52

Pno. 7

Pno. 6

Pno. 5

Pno. 4

Pno. 3

Pno. 2

Pno. 1

Elec.

Pno. 7: *p*  
 Pno. 6: *mp*, *pp*  
 Pno. 5: *mp*, *p*  
 Pno. 4: *pp*, *mf*  
 Pno. 3: *mp*  
 Pno. 2: *mp*  
 Pno. 1: *p*, *pp*  
 Elec. frequency bands:  
 2093-4186hz  
 1047-2093hz  
 523-1047hz  
 262-523hz  
 131-262hz  
 65-131hz  
 20-65hz

bar 90

5:56

6:00

6:04

6:08

Pno. 7

Pno. 6

Pno. 5

Pno. 4

Pno. 3

Pno. 2

Pno. 1

Elec.

5:56 6:00 6:04 6:08

*ppp mp*

*ppp p*

*pp ppp*

*p ppp*

*ppp*

2093-4186hz	→
1047-2093hz	→
523-1047hz	→
262-523hz	→
131-262hz	→
65-131hz	→
20-65hz	→

bar 94

6:12

6:16

6:20

6:24

Pno. 7

Musical staff for Pno. 7. It begins with a treble clef and a whole rest. At 6:16, there is a quarter note with a wavy hairpin above it, followed by a quarter rest. The dynamic marking *pp* is placed below the staff.

Pno. 6

Musical staff for Pno. 6. It begins with a treble clef and a whole rest. At 6:16, there is a quarter note with a wavy hairpin above it, followed by a sequence of notes with accidentals and 'x' marks. A dashed line extends from the start of the staff to the right, with the dynamic marking *ppp* placed below it.

Pno. 5

Musical staff for Pno. 5. It begins with a treble clef and a whole rest. Dynamic markings *mf*, *pp*, *p*, and *pp* are placed below the staff at different time points.

Pno. 4

Musical staff for Pno. 4. It begins with a treble clef and a whole rest. At 6:20, there is a quarter note with a wavy hairpin above it, followed by a sequence of notes with accidentals and 'x' marks. Dynamic markings *ppp*, *pp*, *ppp*, and *pp* are placed below the staff.

Pno. 3

Musical staff for Pno. 3. It begins with a bass clef and a whole rest. At 6:20, there is a quarter note with a wavy hairpin above it, followed by a sequence of notes with accidentals and 'x' marks. Dynamic markings *mp* and *pp* are placed below the staff.

Pno. 2

Musical staff for Pno. 2. It begins with a bass clef and a whole rest. At 6:12, there is a quarter note with a wavy hairpin above it, followed by a sequence of notes with accidentals and 'x' marks. The dynamic marking *pp* is placed below the staff. At 6:24, there is another quarter note with a wavy hairpin above it, followed by a sequence of notes with accidentals and 'x' marks.

Pno. 1

Musical staff for Pno. 1. It begins with a bass clef and a whole rest. At 6:12, there is a quarter note with a wavy hairpin above it, followed by a sequence of notes with accidentals and 'x' marks.

Elec.

Frequency spectrum diagram for the electric instrument. It shows a series of horizontal lines representing frequency bands. The labels on the left are: 2093-4186hz, 1047-2093hz, 523-1047hz, 262-523hz, 131-262hz, 65-131hz, and 20-65hz. Arrows on the right indicate the presence of energy in these bands.

bar 98

6:28

6:32

6:36

6:40

Pno. 7

Musical staff for Pno. 7. It begins with a treble clef and a key signature of one sharp (F#). The staff contains a few notes with accidentals (F#, G, A, B) and a dynamic marking of *pp* (pianissimo) below the staff.

Pno. 6

Musical staff for Pno. 6. It begins with a treble clef and a key signature of one sharp (F#). The staff contains a few notes with accidentals and a dynamic marking of *pp* (pianissimo) below the staff.

Pno. 5

Musical staff for Pno. 5. It begins with a treble clef and a key signature of one sharp (F#). The staff contains a few notes with accidentals and dynamic markings of *mp* (mezzo-piano) and *p* (piano) below the staff.

Pno. 4

Musical staff for Pno. 4. It begins with a treble clef and a key signature of one sharp (F#). The staff contains a few notes with accidentals and dynamic markings of *mp* (mezzo-piano), *p* (piano), *mf* (mezzo-forte), *pp* (pianissimo), and *p* (piano) below the staff.

Pno. 3

Musical staff for Pno. 3. It begins with a bass clef and a key signature of one sharp (F#). The staff contains a few notes with accidentals and dynamic markings of *p* (piano), *pp* (pianissimo), and *p* (piano) below the staff.

Pno. 2

Musical staff for Pno. 2. It begins with a bass clef and a key signature of one sharp (F#). The staff contains a few notes with accidentals and a dynamic marking of *p* (piano) below the staff.

Pno. 1

Musical staff for Pno. 1. It begins with a bass clef and a key signature of one sharp (F#). The staff contains a few notes with accidentals and dynamic markings of *mp* (mezzo-piano) and *pp* (pianissimo) below the staff.

Elec.

- 2093-4186hz
- 1047-2093hz
- 523-1047hz
- 262-523hz
- 131-262hz
- 65-131hz
- 20-65hz



bar 102

6:44

6:48

6:52

6:56

Pno. 7

Musical staff for Pno. 7. It features a treble clef and a series of notes with accidentals (sharps and flats) and dynamic markings. A *pp* marking is present, followed by a *crescendo* hairpin.

Pno. 6

Musical staff for Pno. 6. It features a treble clef and a *p* dynamic marking.

Pno. 5

Musical staff for Pno. 5. It features a treble clef and dynamic markings *pp*, *ppp*, and *mf*. A *crescendo* hairpin is also present.

Pno. 4

Musical staff for Pno. 4. It features a treble clef and dynamic markings *pp*, *ppp*, *pp*, *p*, *mf*, *p*, and *pp*.

Pno. 3

Musical staff for Pno. 3. It features a bass clef and dynamic markings *pp*, *mp*, and *pp*.

Pno. 2

Musical staff for Pno. 2. It features a bass clef and dynamic markings *ppp* and *p*.

Pno. 1

Musical staff for Pno. 1. It features a bass clef and dynamic markings *mp*, *p*, *pp*, and *mp*.

Elec.

- 2093-4186hz
- 1047-2093hz
- 523-1047hz
- 262-523hz
- 131-262hz
- 65-131hz
- 20-65hz



bar 106

7:00

7:04

7:08

7:12

Pno. 7

Pno. 6

Pno. 5

Pno. 4

Pno. 3

Pno. 2

Pno. 1

Elec.

- 2093-4186hz
- 1047-2093hz
- 523-1047hz
- 262-523hz
- 131-262hz
- 65-131hz
- 20-65hz

The musical score consists of seven piano parts and one electric guitar part. The piano parts are arranged from Pno. 7 at the top to Pno. 1 at the bottom. Each piano part has a treble or bass clef and contains musical notation with dynamic markings. The electric guitar part is at the bottom, marked with a double bar line and a list of frequency ranges.

Dynamic markings for Pno. 7: *ppp* (7:00-7:04), *p* (7:04-7:08), *ppp* (7:12-7:16)

Dynamic markings for Pno. 6: *ppp* (7:00-7:04), *p* (7:04-7:08), *ppp* (7:12-7:16)

Dynamic markings for Pno. 5: *p* (7:00-7:04), *mp* (7:04-7:08), *mf* (7:12-7:16)

Dynamic markings for Pno. 4: *p* (7:00-7:04), *mp* (7:04-7:08), *p* (7:12-7:16)

Dynamic markings for Pno. 3: *p* (7:00-7:04), *mp* (7:04-7:08), *p* (7:12-7:16)

Dynamic markings for Pno. 2: *pp* (7:00-7:04), *p* (7:04-7:08), *ppp* (7:12-7:16)

Dynamic markings for Pno. 1: *p* (7:00-7:04), *ppp* (7:12-7:16)

Electric guitar frequency filter list:

- 2093-4186hz
- 1047-2093hz
- 523-1047hz
- 262-523hz
- 131-262hz
- 65-131hz
- 20-65hz

bar 110

7:16

8:40

Pno. 7

8  
-  
*subito*

Pno. 6

-  
*subito*

Pno. 5

-  
*subito*

Pno. 4

-  
*subito*

Pno. 3

-  
*subito*

Pno. 2

-  
*subito*

Pno. 1

8  
-  
*subito*

Elec.

2093-4186hz	→
1047-2093hz	→
523-1047hz	→
262-523hz	→
131-262hz	→
65-131hz	→
20-65hz	→

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