

# REFRACTIONS

For Two Electric Guitars

2019

This piece was composed with financial assistance from Jean-Pierre Lin and Hermione Lyall

**First performance** June 2019  
by **Sascha Thiele and Jannik Steudter**

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## Performance Notes

### Symbols



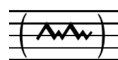
- Microtonally flat, natural or sharp. Only used with 7th harmonic in sounding part



- Cue other guitar. Notes to be struck in exact unison



- Long and uncounted resonance. Continue until cue from the guitar which plays the first note with an accent in the next bar



- Resonance continued (on next stave)



- Increase feedback of delay using expression pedal



- Long, uncounted normal note



- Long, uncounted harmonic note



- Half note harmonic, played 'in tempo'



- Quarter note harmonic, played 'in tempo'



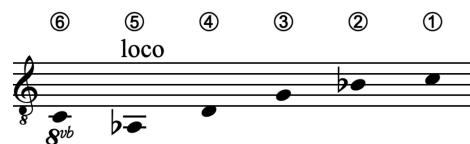
- Eighth note harmonic, played 'in tempo'

All slurred should be played as a phrase (even when between both players) and each note of the phrase should resonate for as long as possible.

> (accent, for guitar 1 only) - The attack of the note is heard. Expression pedal lifted completely up, so that the attack is not picked up by the delay.  
This is **only for the attack of the note**. During the subsequent resonance the delay-feedback gradually increases as normal.

## Performance Notes

### Scordatura for both guitars:



'Played' staves are written in standard guitar tuning.

'Sounding' staves are the resultant pitches with scordatura.

### Guitar 1

Pedals needed:

Overdrive

Volume Pedal

Delay + Expression Pedal

Reverb (Optional; between overdrive and volume pedal if used)

If a reverb pedal is used, it should be with a smallish spread. The sound should never be too booming or cathedral-like.

### Playing technique

Most notes are played swelling in from silence. When indicated, each note must be struck with the volume off (by using the volume pedal) and then gradually crescendo.

The resonance of the note must have delay effect. **The attack must never be part of the delayed sound.**

The expression pedal is used to control the feedback amount of the delay pedal.

This gradually increases to create an impossibly long resonance.

There should be a simultaneous increase of volume and delay-feedback. The player should then listen carefully to try to make the sound blend as seamlessly as possible with the resonance of guitar 2 adjusting the volume and expression.

-The delay/feedback control is only used when the volume of the guitar is completely off.

The feedback amount should increase gradually, however it should never become too noisy. Each note should blend as seamlessly as possible with the resonance of the guitar 2 part.

-The volume pedal should be placed before the delay pedal so that the delay can be used without hearing the attack of the note.

-An overdrive pedal should be placed before the volume pedal.

The sound of both guitars should be similar when guitar one isn't using the delay pedal.

### Guitar 2

Pedals needed:

Overdrive

Reverb (optional)

If a reverb pedal is used, it should be with a small spread. The sound should never be booming or cathedral-like.

### Playing technique

Harmonics should be as resonant as possible and be allowed to sound for a long time.

All notes should be played with sharp attack. When a series of harmonics are played, all of them should sound as strongly as possible and be allowed to resonate.

When no expression or volume pedals are in use, both guitars should have a similar sound: very resonant and with some overdrive.

## Instructions

### General

Both guitars should attempt to sound together as one instrument.

From the first note to the last, there should never be silence during the piece.

Beating patterns that may occur during the piece are encouraged and should be emphasised.

### Durations/tempo

-The score is **not spatially notated**, allow as long as necessary for the sound to resonate before moving on to the next attack.

This is not a fixed amount of time, but the less effective the sound of the 'resonance' is, the shorter the time can be.

-The durations of the stemless noteheads are free for the performers, but should be long and resonant, with the guitarist playing the next note cueing the entries for each new note or set of notes that are played.

-Notes which have a stem should be played with a straight rhythm, which is not too fast. This can change between phrases.

-The piece is not supposed to be counted, but some approximate tempi have been included to give a general idea of the speed of the notes with stems.

-Indicated tempi are **very approximate**. As long as the notes within a phrase are in tempo, tempo fluctuations between phrases are permitted.

-When there are fewer notes in a phrase, the 'in tempo' notes can be slower. With more notes in a phrase, it can be slightly quicker, but never too fast.

### Dynamics

Dynamics are very similar the whole way through the piece. Notes with an accent should be played forte and be allowed to resonate for as long as possible. Notes which swell from silence should be done as seamlessly as possible and sound like an extension of the resonance of the other guitar.

# Refractions

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**Sonorous, ethereal, timeless - slightly quicker for longer phrases and slightly slower for shorter phrases. Never faster than  $\text{♩} = 55$**

♯ delay-feedback

① l.v. sempre

♯

③

the interaction of resonance between the two guitars should be uncouncted and long

↑ \* cue guitar 1 l.v. sempre

⑥

♯

*f*

\* Notes of both guitars struck in exact unison.  
The accented note masks the attack of the 'silent' note.

♯ Increase delay-feedback using the expression pedal.  
The natural decay of one guitar and the swell of the other creates a cross fade effect.  
The result of this should sound like one continuous, but impossibly long resonance.  
Allow both resonances to be heard at the same time to create interaction between the resonances.  
There can be a slow and continuous increase in feedback level, but never allow the feedback to become so intense that the sound of the two guitars no longer blends seamlessly together.

▼ Notes with stems to be played 'in tempo'.  
When more than one note is played, each note in the phrase should be played at the same speed, with the final note being long and uncouncted.



The image displays two systems of musical notation, each consisting of four staves labeled S1, S2, P1, and P2. The notation is written in treble clef with a key signature of one sharp (F#).

**System 1:**

- S1:** Contains whole notes and rests.
- S2:** Contains whole notes and rests.
- P1:** Features a melodic line starting with a forte (*f*) dynamic. It includes slurs, fingerings (1, 2, 1-4), and articulation marks. Above the staff, the terms "delay off", "loco", "delay on", "delay off", and "delay on" are written, with dashed arrows indicating specific points in the melody.
- P2:** Features a bass line with fingerings (6, 4, 1, 5, 5, 6) and articulation marks.

**System 2:**

- S1:** Contains whole notes and rests.
- S2:** Contains whole notes and rests.
- P1:** Continues the melodic line with a forte (*f*) dynamic. It includes slurs, fingerings (1, 1-4, 6), and articulation marks. Above the staff, the terms "delay off", "delay on", "delay off with attack, sempre", and "loco" are written, with dashed arrows indicating specific points in the melody.
- P2:** Features a bass line with fingerings (2, 6, 5, 2) and articulation marks.

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S1

S2

P1

P2

6 5 4 1

6 5 4 3 1

4 6

1-3

3-5

1-3 no attack

*f*

*n*

4 1 2 5

6

6