toovviivfor

for four electric guitars
for the Zwerm Guitar Quartet

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GUITAR I

(II)  (V)  (VI)
D → D → E  (1st string)
A → A → A
F#  G  G↓
C↓  B  C  (→ C#)
Ab↓  Ab  G#
D → D → A  (6th string)

GUITAR II

(II)  (V)  (VI)
Eb  E↑  F↑  (1st string)
Bb↑  B  Bb
Ab↓  F#  A
D → D  Eb↓
A → G  A
F#  F↓  E  (6th string)
GUITAR III

(II)  (V)  (VI)
E    F↓    Eb↓  (1st string)
A    G#    B
F#   G    E
C#   C#↓   C   (→ C#)
Bb↑  A     A
A    G    A  (6th string)

GUITAR IV

(II)  (V)  (VI)
C↓   C#↓   C   (→ C#) (1st string)
A →  A    G#
Eb   F↓    G↓
D    E↑    E
A    B    Bb
D →  D →  A  (6th string)
Performance Notes

Play only open strings, 2\textsuperscript{nd}, 3\textsuperscript{rd}, and 4\textsuperscript{th} harmonics (12\textsuperscript{th}, 7\textsuperscript{th}, and 5\textsuperscript{th} frets) and notes stopped at the 7\textsuperscript{th} and 12\textsuperscript{th} frets. Improvise around the pulse while gradually and audibly retuning from one “section” to another. Each section has a new fundamental (II, IV, VI) and tuning (harmonic series on that fundamental). The new tunings, when reached, are places of rest: let them sit for a while.

If possible, retune the higher strings first, the lowest (VI) last. Try not to tune an individual string completely before tuning other strings. Alternating between strings, gradually retune them to the new pitches.

Try for a smooth, reverberant cloud of moving intonation. If digital delays are used, try to synchronise the length of the delays to the tempo, or pulse, of the piece.

The piece may be of any length. Section lengths should be more or less equal.

Form and Rhythm

Use one steady, fast pulse (tempo) for the entire piece. There are two “cadences” in the piece, at the points where the V and VI chords become completely in tune. Choose a different meter for the arrival of each new tuning (as well as the beginning), and divide that meter up into four different patterns, one for each guitar. These patterns should be just a few measures long, and each guitar should have a different, simple subdivision of the meter. In other words, pick three different meters (10/8, 11/4, anything) and divide each four different ways so that a four-part hemiolas is created. When the ensemble agrees upon the arrival at a new tuning (by some simple method of visual contact), these hemiola patterns should be played for a while before moving on (from the II or V) or ending the piece (VI).

It might help if one of the guitars plays a simple version of the basic meter. For example, if 10/8 is selected for one of the chords, one player should just play a 5/4 pattern. The simplest way to play these hemiolas, at least as a way of beginning, might be to arpeggiate the strings either as harmonics, open, or as stopped notes at the 12\textsuperscript{th} fret (or any combination thereof).

As an example of different meters and subdivisions for the three “complete” (in-tune) chords:

\begin{itemize}
  \item II (D, beginning): 10/8 meter (3+3+2+2 in one guitar; 5/4 in another; two other patterns)
  \item V (G): 8/8 (3+2+3, 4/4; two other patterns)
  \item VI (A): 7/8 (4+3, 3+4; 5+2; 2+5)
\end{itemize}

A simple melodic sequence (different for each guitar) might be created and used instead of one of the metrical subdivisions. For example, the 10/8 pattern (on D), Guitar II might be played as a simple arpeggiation on 12\textsuperscript{th} fret harmonics, while Guitar I invents a more complex melody. As an illustration (two guitars only):
As in the rest of the piece, the cadential sections created by the ensemble should only use
a combination of open strings 2\textsuperscript{nd}, 3\textsuperscript{rd} and 4\textsuperscript{th} harmonics, and stopped strings at the 7\textsuperscript{th} or 12\textsuperscript{th} frets.

Sections might be timbrally distinguished. For example: harmonics in the first section,
tapping in the second, chords in the third. Different dynamics or guitar tones might be
used to differentiate the sections as well.

During the transitions from one tuning to another, improvise freely within and
emanating from the rhythm and meter, retaining the idea of the constant pulse.

**Tuning**

The piece is a gradual modulation between three harmonic series, built on three
fundamental pitches. Tunings should be as close as possible to the actual intonations of
these harmonic series (D, G, A). The guitarists may learn these intervals by ear (easily
done), perform the piece with the aid of electronic tuning devices, or use some
combination of both techniques.

Arrows in the score indicate pitches common to successive harmonic series, or ones that
are related as P5\textsuperscript{th}s. In many cases, performers should devise simple ways of checking
their tuning with each other. For example, the lowest G in the second chord (V), Guitar
III, is the fundamental for that series, and is a major 9\textsuperscript{th} below the A in the first and
second chord in that guitar. That A must also be in tune (P5\textsuperscript{th}) with the Ds in the other
guitars in those chords.

Each chord is tuned to a different (yet related) harmonic series on a new fundamental
(with octave equivalences). In the harmonic series P5\textsuperscript{th}s (3\textsuperscript{rd} harmonic), major and minor
2\textsuperscript{nd}s (9\textsuperscript{th} and 17\textsuperscript{th} harmonics), and M7\textsuperscript{th}s (15\textsuperscript{th} harmonic) are extremely close to their equal-
tempered (fretted) neighbors. M3\textsuperscript{rd}s (5\textsuperscript{th} harmonic) are a little flat (14¢) of equal-
tempered tuning (fretted). m7\textsuperscript{th}s (7\textsuperscript{th} harmonic), “tritones” (11\textsuperscript{th} harmonic), and “m6\textsuperscript{th}s”
(13\textsuperscript{th} harmonic) are more distant.

These latter pitches should be tuned as follows (with cents deviations indicated from the
nominal equal-tempered pitches):

\[
\begin{align*}
\text{II: D fundamental} & \\
C \downarrow (7\textsuperscript{th} harmonic): & 31\text{¢ (cents)} \text{ flat} \\
G\# \downarrow (11\textsuperscript{th} harmonic): & 49\text{¢ flat (about } \frac{1}{4}\text{-tone)}
\end{align*}
\]
Bb↑ (13th harmonic): 43¢ sharp (about ¼-tone)

V: G fundamental
   F↓ (7th harmonic): 31¢ flat
   C#↓ (11th harmonic): 49¢ flat (about ¼-tone)
   Eb↑ (13th harmonic): 43¢ sharp (about ¼-tone)

I: A fundamental
   G↓ (7th harmonic): 31¢ flat
   Eb↓ (11th harmonic): 49¢ flat (about ¼-tone)
   F↑ (13th harmonic): 43¢ sharp (about ¼-tone)

The 11th and 13th harmonics may be heard as a “neutral” fourth/tritone and a minor/major 6th, respectively.

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