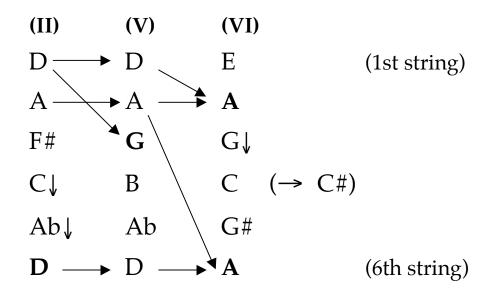
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for four electric guitars for the Zwerm Guitar Quartet

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GUITAR I



GUITAR II

(II) (V) (VI)

Eb
$$E \uparrow F \uparrow$$
 (1st string)

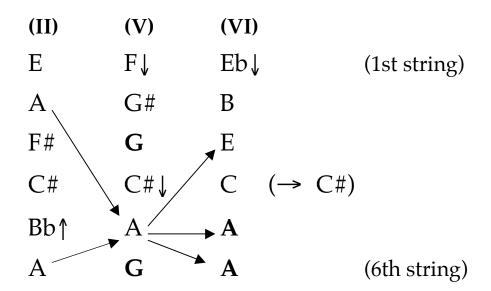
Bb \uparrow B Bb

Ab \downarrow F# A

D D Eb \downarrow
A

F# F \downarrow E (6th string)

GUITAR III



GUITAR IV

(II) (V) (VI)

$$C\downarrow$$
 $C\#\downarrow$ C (\rightarrow $C\#$) (1st string)

 $A \longrightarrow A$ $G\#$
 $Eb F \downarrow G \downarrow$
 $D \longrightarrow E \uparrow E$
 $A \longrightarrow B \longrightarrow Bb$
 $D \longrightarrow A$ (6th string)

Performance Notes

Play only open strings, 2nd, 3rd, and 4th harmonics (12th, 7th, and 5th frets) and notes stopped at the 7th and 12th 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^{th} fret (or any combination thereof).

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

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II (D, beginning): 10/8 meter (3+3+2+2 in one guitar; 5/4 in another; two other patterns)
V (G): 8/8 (3+2+3, 4/4; two other patterns)
VI (A): 7/8 (4+3, 3+4; 5+2; 2+5)
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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^{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 2nd, 3rd and 4th harmonics, and stopped strings at the 7th or 12th 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 P5ths. 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 9th below the A in the first and second chord in that guitar. That A must also be in tune (P5th) 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 P5ths (3rd harmonic), major and minor 2nds (9th and 17th harmonics), and M7ths (15th harmonic) are extremely close to their equal-tempered (fretted) neighbors. M3rds (5th harmonic) are a little flat (14¢) of equal-tempered tuning (fretted). m7ths (7th harmonic), "tritones" (11th harmonic), and "m6ths" (13th harmonic) are more distant.

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

II: D fundamental

C↓ (7th harmonic): 31¢ (cents) flat

G#↓ (11th harmonic): 49¢ flat (about ¼-tone)

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 11^{th} and 13^{th} harmonics may be heard as a "neutral" fourth/tritone and a minor/major 6^{th} , respectively.

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