Torsten Anders

Tempziner Modulationen
Microtonal Notation

This score is notated in 31-tone equal temperament (which is very close to quarter-comma meantone). A quartertone sharp raises by one 31-tone step (38.71 cents), the chromatic semitone (e.g., C-C#) are two steps (77.42 cents), the diatonic semitone (e.g., C-Db) are three steps (116.13 cents) and so forth. This temperament includes virtually just 5-limit intervals (e.g., frequency ratios 5/4, 6/5), but also virtually just 7-limit intervals (e.g., 7/4, 7/6).

7-limit intervals are notated either as augmented intervals or using quartertone accidentals. For example, the frequency ratio 7/4 can be notated as augmented sixth (e.g., C-A#) and 7/6 as augmented second (e.g., C-D#). A quartertone sharp/flat raises/flattens effectively by a septimal comma 64:63, the difference between a Pythagorean seventh—two stacked fourths—and a harmonic seventh. For example, the frequency ratio 7/6 can alternatively be notated as a minor third diminished by a quartertone flat, and 8/7 can be notated as a whole tone augmented by a quartertone sharp.

Instrumentation

31-tone Fokker organ

96-tone Carrillo piano
(certain pitches of the Carrillo piano are very close to notes of the Fokker organ, with a maximum of 6 cents difference)

Notation of the Carrillo Piano Part

The Carrillo piano part is notated twice in the full score, first in 31-tone temperament (for the convenience of the score reader) and then the performance notation (for the convenience of the musician). In the latter notation, the pitches are notated as they would be for a normally tuned piano (ranging over 96 tones). The first notation uses a single staff (as the sounding pitches are all contained in a single octave) while the second notation uses 4 staves in order to avoid very many ledger lines. The mapping for all notes between these two notations is provided on the next page.

Torsten Anders, September 2011
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**Largo** \( \frac{j}{46} \)

Carrillo Piano

Grace notes always rather slow

Carrillo Piano

Grace notes always rather slow

Lowest staff two octaves down!

Fokker Organ

**Largo** \( \frac{j}{46} \)

Man. 1 \( \text{ff} \)

Man. 1 \( \text{mp} \)

Man. 2

Pedals

Harmony (Analysis)

harmonic 7th

harmonic 7th

subharmonic 6th

harmonic 7th

subharmonic 6th
rit. . . . . . . . . . . a tempo

Pno.

Org.

Ped.

Harm.

harmonic 7th
harmonic 9th
harmonic 7th
harmonic 7th
subharmonic 6th