Marc Sabat

AUTOMAT

music scenery for 2 violins and video with field recording

PLAIN SOUND MUSIC EDITION
ACCIDENTALS

EXTENDED HELMHOLTZ-ELLIS JI PITCH NOTATION

for Just Intonation
designed by Marc Sabat and Wolfgang von Schweinitz

The exact intonation of each pitch may be written out by means of the following harmonically-defined signs:

\[ \begin{array}{c}
  \text{Pythagorean series of fifths – the open strings} \\
  (\ldots c g d a e \ldots )
\end{array} \]

\[ \begin{array}{c}
  \text{lowers / raises by a syntonic comma} \\
  81 : 80 = \text{circa 21.5 cents}
\end{array} \]

\[ \begin{array}{c}
  \text{lowers / raises by two syntonic commas} \\
  \text{circa 43 cents}
\end{array} \]

\[ \begin{array}{c}
  \text{lowers / raises by a septimal comma} \\
  64 : 63 = \text{circa 27.3 cents}
\end{array} \]

\[ \begin{array}{c}
  \text{lowers / raises by two septimal commas} \\
  \text{circa 54.5 cents}
\end{array} \]

\[ \begin{array}{c}
  \text{raises / lowers by an 11-limit undecimal quarter-tone} \\
  33 : 32 = \text{circa 53.3 cents}
\end{array} \]

\[ \begin{array}{c}
  \text{lowers / raises by a 13-limit tridecimal third-tone} \\
  27 : 26 = \text{circa 65.3 cents}
\end{array} \]

\[ \begin{array}{c}
  \text{lowers / raises by a 17-limit schisma} \\
  256 : 253 = \text{circa 6.8 cents}
\end{array} \]

\[ \begin{array}{c}
  \text{raises / lowers by a 19-limit schisma} \\
  513 : 512 = \text{circa 3.4 cents}
\end{array} \]

\[ \begin{array}{c}
  \text{raises / lowers by a 23-limit comma} \\
  736 : 729 = \text{circa 16.5 cents}
\end{array} \]

In addition to the harmonic definition of a pitch by means of its accidentals, it is also possible to indicate its absolute pitch-height as a cents-deviation from the respectively indicated chromatic pitch in the 12-tone system of Equal Temperament.

The attached arrows for alteration by a syntonic comma are transcriptions of the notation that Hermann von Helmholtz used in his book “Die Lehre von den Tonempfindungen als physiologische Grundlage für die Theorie der Musik” (1863). The annotated English translation “On the Sensations of Tone as a Physiological Basis for the Theory of Music” (1875/1885) is by Alexander J. Ellis, who refined the definition of pitch within the 12-tone system of Equal Temperament by introducing a division of the octave into 1200 cents. The sign for a septimal comma was devised by Giuseppe Tartini (1692–1770) – the composer, violinist and researcher who first studied the production of difference tones by means of double stops.
AUTOMAT (live version for 2 violins and video with stereo field recording)

music: Marc Sabat
video: Peter Sabat

con sordino

Cue1

0'04" con sordino

events which are connected by dotted lines are to be co-ordinated as indicated, otherwise freely

0'12"

Cue2

0'26"

0'31"

0'35"

0'42"

0'56"

1'13"

1'30"

1'58"
8'45"  \( \text{(7)} \)

9'00"  \( \text{9'09"} \)

9'15"  \( \text{9'09"} \)

9'02"  più calmo  

39  \( \text{Cue11 \, 9'28"} \)

9'31"  \( \text{9'31"} \)

9'50"  \( \text{9'50"} \)

9'52"  \( \text{9'52"} \)

10'14"  \( \text{10'14"} \)

10'17"  \( \text{10'17"} \)

10'08"  \( \text{10'08"} \)

10'40"  \( \text{10'40"} \)
FIELD RECORDING CUTS OFF ABRUPTLY!
Berlin, 13.10.2004