

Idin Samimi Mofakham

Ketāb al-Advār

for
Piano

2020

Table of the frequencies to be re-tuned on the Piano (from G3 to C5)

0 is equal to the G3 (Helmholtz g=195.998 Hz - The concert pitch note A4 = 440 Hz)

#	Notation	Sounding ¹	12-TET Pitch	¢ deviation ²	Freq.	Fraction
0	G₃	G ₃	G₃	0.00	196.000 Hz	1/1
1	A_{b3}	A _b	G₃/A_b	-10	206.486 Hz	256/243
2	A₃	B _{bb}	A₃	-20	217.532 Hz	65536/59049
3	B_{b3}	A ₃	A₃	+4	220.500 Hz	9/8
4	B₃	B _b	A₃/ B_b	-6	232.296 Hz	32/27
5	C₄	C _b	B₃	-16	244.724 Hz	8192/6561
6	D_{b4}	B ₃	B₃	+8	248.063 Hz	81/64
7	D₄	C ₄	C₄	-2	261.333 Hz	4/3
8	E_{b4}	D _b	C₄/D_b	-12	275.314 Hz	1024/729
9	E₄	E _{bb}	D₄	-22	290.043 Hz	262144/177147
10	F₄	D ₄	D₄	+2	294.000 Hz	3/2
11	G_{b4}	E _b	D₄/ E_b	-8	309.728 Hz	128/81
12	G₄	F _b	E₄	-18	326.298 Hz	32768/19683
13	A_{b4}	E ₄	E₄	+6	330.750 Hz	27/16
14	A₄	F ₄	F₄	-4	348.444 Hz	16/9
15	B_{b4}	G _b	F₄/ G_b	-14	367.086 Hz	4096/2187
16	B₄	A _{bb}	G₄	-24	386.724 Hz	1048576/531441
17	C₅	G ₄	G₄	0.00	392.000 Hz	2/1

¹ 17 note Unequal Divisoned Gamut proposed by Safi al-Din al-Urmawi in 13th century in his book “Ketab al-Advar”, notated in The Extended Helmholtz-Ellis JI Pitch Notation, as a series of perfect fifths .

² deviation in cents from 12TET

Harmonics preparation

Respectively from low to high as in the picture below:
 11th (Yellow) 7th (White) 10th (Green) 13th (Red)



Explanation of microtonal accidentals* (on the sounding staff)

(*The Extended Helmholtz-Ellis JI Pitch Notation designed by Marc Sabat and Wolfgang von Schweinitz)

♭♭ ♭ ♮ 3-LIMIT (PYTHAGOREAN) INTERVALS
to notate pitches from the series of untempered perfect fifths $(3/2) \approx \pm 702.0$ cents;

♮♯ ♯ 5-LIMIT (PTOLEMAIC) INTERVALS
an alteration by one syntonic comma $(81/80) \approx \pm 21.5$ cents;

♭ 7-LIMIT (SEPTIMAL) INTERVALS
an alteration by one septimal comma $(64/63) \approx \pm 27.3$ cents;

† 11-LIMIT (UNDECIMAL) INTERVALS
an alteration by one undecimal quartertone $(33/32) \approx \pm 53.3$ cents;

♯ 13-LIMIT (TRIDECIMAL) INTERVALS
an alteration by one tridecimal thirddtone $(27/26) \approx \pm 65.3$ cents;

Explanation of signs

m.d. mano destra - right hand

m.s. mano sinistra - left hand

× pizzicato una corda

■ damped string

◆ harmonic

Duration \approx 14' to 16'

Dedicated to Sanae Yoshida
Ketāb al-Advār

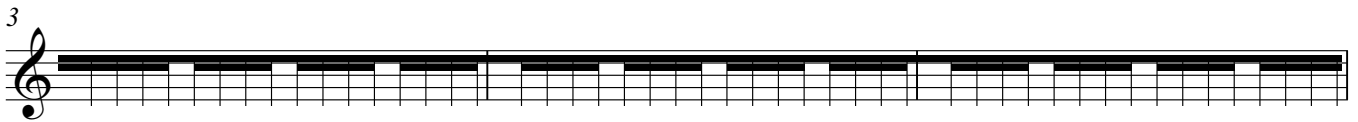
Idin Samimi Mofakham

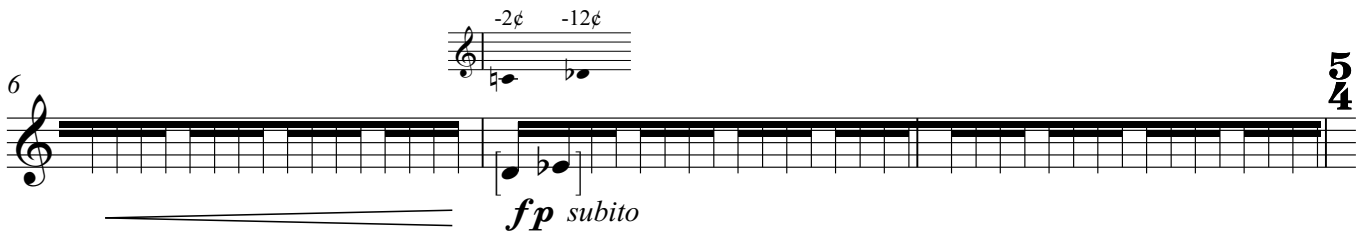
Sounding 

Allegro ♩ = 132
4/4

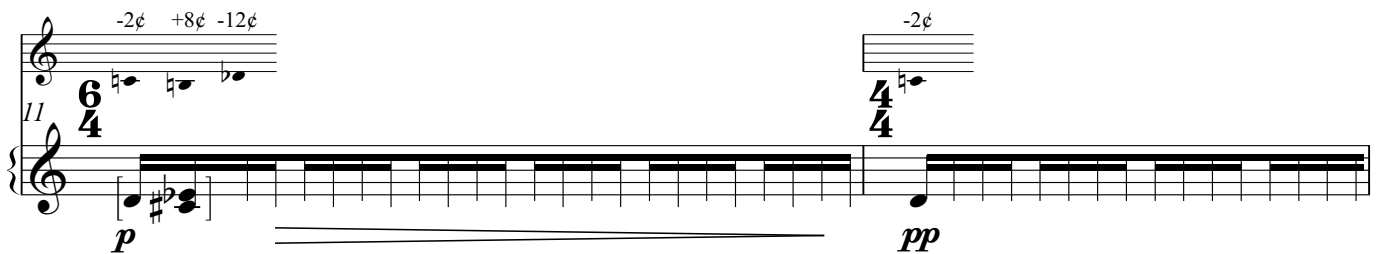
Pianoforte 

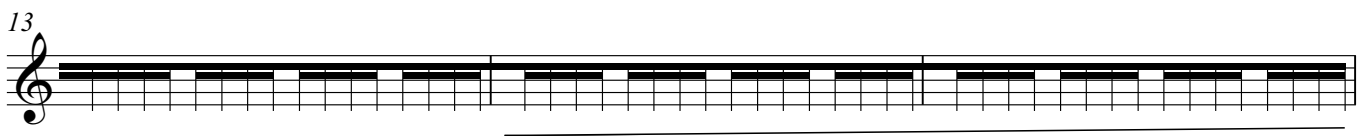
sfz pp *con moto*
Ped. →
(hold pedal until the end)

3 

6 
fp subito **5/4**

9 **5/4** 
f **6/4**

11 
p **6/4** 
pp **4/4**

13 

-2¢ -12¢ -8¢

16 $\frac{7}{4}$ $\frac{4}{4}$

p

-22¢ -12¢ -8¢ -22¢ +8¢ -12¢

18 $\frac{4}{4}$ $\frac{5}{4}$ $\frac{3}{4}$

f

-2¢ +8¢ -12¢ -2¢

20 $\frac{3}{4}$ $\frac{4}{4}$

ff *rffz p subito*

23

+8¢ -2¢ -12¢ -8¢

26 $\frac{5}{4}$ $\frac{5}{4}$

f

+8¢ -2¢ -12¢ -18¢

27 $\frac{5}{4}$ $\frac{4}{4}$

+8¢ -2¢ -22¢ -8¢

28 $\frac{4}{4}$ $\frac{5}{4}$ $\frac{4}{4}$

-16¢ -2¢ -22¢ -18¢

30 $\frac{4}{4}$ $\frac{7}{4}$ $\frac{3}{4}$

-16¢ -2¢ +2¢ -18¢

-6¢ -2¢ +2¢ -18¢

32 $\frac{3}{4}$ $\frac{3}{8}$ $\frac{4}{4}$

-6¢ -2¢ -12¢ -18¢

35 $\frac{7}{8}$ $\frac{6}{4}$ $\frac{7}{8}$

-16¢ -2¢ +8¢ +8¢

-2¢ +8¢ -12¢

38 $\frac{7}{8}$ $\frac{8}{8}$ $\frac{4}{4}$

-2¢

40 $\frac{4}{4}$

ff p subito *ppp possibile*

44 $\frac{3}{4}$ $\frac{4}{4}$

-2¢ -12¢

48 $\frac{4}{4}$ $\frac{3}{8}$ $\frac{4}{4}$

mp

-2¢ +8¢ -12¢

51 $\frac{4}{4}$ $\frac{7}{8}$ $\frac{4}{4}$

-2¢ -12¢ -8¢

54 $\frac{4}{4}$ $\frac{5}{4}$ $\frac{4}{4}$

p

+8¢ -2¢ -12¢ -8¢

56 $\frac{4}{4}$

+8¢ -2¢ -12¢ -18¢

59 $\frac{4}{4}$

mf

62 $\frac{3}{8}$ $\frac{4}{4}$

+4¢ -2¢ -12¢ -18¢

64 $\frac{4}{4}$ $\frac{7}{4}$ $\frac{3}{8}$ $\frac{4}{4}$

p

+4¢ -2¢ -12¢ -8¢

67 $\frac{4}{4}$ $\frac{5}{8}$ $\frac{4}{4}$

+4¢ +8¢ -12¢ -8¢

71 $\frac{4}{4}$ *mf*

74 $\frac{5}{4}$ $\frac{4}{4}$

-20¢ -16¢ -22¢ -18¢

76 $\frac{4}{4}$ *f*

-20¢ -16¢ -22¢ -8¢

78 $\frac{7}{8}$ $\frac{4}{4}$

-20¢ -16¢ -2¢ -8¢

81 $\frac{4}{4}$ $\frac{5}{8}$ $\frac{4}{4}$ *p*

+4¢ -16¢ -2¢ -8¢

83 4/4

85

4/4

+4¢ +8¢ -2¢ -8¢

87 4/4

7/8

4/4

+4¢ +8¢ -12¢ -8¢

90 4/4

10/8

4/4

-6¢ +8¢ -12¢ +2¢

92 4/4

94

3/8

4/4

-16¢ +8¢ -12¢ -22¢

96 $\frac{4}{4}$ $\frac{10}{8}$ $\frac{4}{4}$

-2¢ +8¢ -12¢

99 $\frac{4}{4}$ $\frac{7}{8}$ $\frac{4}{4}$

-6¢ +8¢ -2¢ -12¢

102 $\frac{4}{4}$ $\frac{5}{4}$ $\frac{3}{8}$ $\frac{4}{4}$

-6¢ +8¢ -2¢

105 $\frac{4}{4}$

109

fff possibile

15"

109 $\frac{4}{4}$

+41¢ -31¢ -2¢ +41¢ +41¢ -14¢ -22¢ -31¢ -2¢ +41¢

Senza Misura
(do not rush, wait three to five seconds after each sound)

110 ≈ 10" to 15"

p sempre

-2¢ +41¢ +41¢ -31¢ +41¢ -20¢ -10¢ -49¢ -31¢ +41¢ -2¢ -31¢

112

-2¢

Allegro ♩ = 132

114 $\frac{4}{4}$

sfz *sfz pp*

(damp the strings with hand)

+8¢ -16¢ -2¢

117 **5**/**4** **6**/**4**

-6¢ -16¢ +8¢ +4¢ -6¢ -16¢

119 **6**/**4** **7**/**4** **5**/**4**

-6¢ -20¢ +4¢ -10¢ +4¢ -20¢

121 **5**/**4** **8**/**8** **7**/**4**

-10¢ -20¢

123 **7**/**4** **4**/**4** **7**/**4**

-10¢

125 **7**/**4** **9**/**4**

molto rall.

fff *ppp*

-14¢ +41¢ -49¢ -49¢ -31¢ -31¢ -49¢ -49¢

Senza Misura
(do not rush,
wait three to five seconds after each sound)

127 *ff*

pizz.
una corda

-49¢ -31¢ -24¢ -10¢ -49¢ -31¢ -20¢ -14¢

129 *p* ord.

-2¢ -31¢ -49¢ -31¢ -31¢ -10¢

130 *mf*

-14¢ -20¢ -10¢ -31¢ -10¢ -31¢

131 damp ord. pizz. ord.

sfz *p* *mf* *ppp possibile* *mf*

⑦ ⑦

$\frac{11}{4}$ +4¢ -20¢ -6¢

Allegro ♩ = 132 *molto rall.*

132 $\frac{11}{4}$

mf

+41¢ +41¢ -31¢ -12¢ -2¢ +41¢ -20¢ -10¢

Senza Misura
(do not rush,
wait three to five seconds after each sound)

133 pizz. damp ord.

f *ppp possibile*

⑬ ⑬ ⑦ ⑬

Lento ♩ = 52

134 $\frac{3}{4}$ $\frac{5}{4}$ $\frac{5}{8}$ $\frac{4}{4}$ $\frac{6}{4}$ $\frac{4}{4}$

ppp possibile

140 $\frac{4}{4}$ $\frac{5}{4}$ $\frac{3}{8}$ $\frac{3}{4}$ $\frac{4}{4}$ $\frac{1}{4}$

146 $\frac{1}{4}$ $\frac{3}{4}$ $\frac{4}{4}$ $\frac{3}{4}$ ∞

8^{va} sfz p sfz

Musical score for measures 150-153. The score is written for piano with three staves: Treble, Bass, and a lower Bass staff. Measure 150 starts with a treble clef, a key signature of one flat, and a time signature of 8/8. The dynamic is *mf statico*. Above the treble staff, there are markings for *8va* and a dashed line. The notes are chords with accents. Measure 151 has a time signature of 2/4 and a dynamic of *mf*. Measure 152 has a time signature of 5/16 and a dynamic of *mf*. Measure 153 has a time signature of 3/8 and a dynamic of *mf come prima*. The lower Bass staff contains a melodic line with a *molto cresc.* marking. The bottom staff has chords and a melodic line.

Musical score for measures 154-158. The score is written for piano with three staves. Measure 154 starts with a treble clef, a key signature of one flat, and a time signature of 2/4. The dynamic is *f*. Above the treble staff, there are markings for *8va* and a dashed line. The notes are chords with accents. Measure 155 has a time signature of 7/32 and a dynamic of *f con forza*. Measure 156 has a time signature of 2/4 and a dynamic of *f*. Measure 157 has a time signature of 3/4 and a dynamic of *f*. Measure 158 has a time signature of 2/4 and a dynamic of *f*. The lower Bass staff contains a melodic line with a *molto cresc.* marking. The bottom staff has chords and a melodic line.

Musical score for measures 159-162. The score is written for piano with three staves. Measure 159 starts with a treble clef, a key signature of one flat, and a time signature of 5/4. The dynamic is *f*. Above the treble staff, there are markings for *8va* and a dashed line. The notes are chords with accents. Measure 160 has a time signature of 3/16 and a dynamic of *f*. Measure 161 has a time signature of 4/4 and a dynamic of *f*. Measure 162 has a time signature of 5/8 and a dynamic of *f*. The lower Bass staff contains a melodic line with a *molto cresc.* marking. The bottom staff has chords and a melodic line.

178 $\frac{4}{4}$ $\frac{11}{32}$ $\frac{7}{8}$ $\frac{3}{8}$

fff come possibile

181 $\frac{3}{8}$ $\frac{2}{4}$ $\frac{2}{16}$ $\frac{4}{4}$ $\frac{5}{8}$

mf

185 $\frac{5}{8}$ $\frac{2}{4}$ $\frac{6}{4}$ $\frac{3}{32}$ $\frac{3}{4}$

8va

sfz

sfz

$\frac{3}{4}$ $\frac{3}{4}$ $\frac{4}{4}$ $\frac{2}{4}$ $\frac{4}{4}$ $\frac{6}{4}$ $\frac{3}{8}$

-24¢
-20¢
-10¢

m.d.

mf *p*

m.d. → m.s.

sfz *p*

mf

-14¢
-16¢
-20¢

-24¢
-16¢
-20¢

196

3/8

4/4

9/8

3/8

6/4

7/32

4/4

p

pp meno

p

pp meno

p
m.s.

-24¢
-20¢
-10¢

-14¢
-16¢
-20¢

202

4/4

m.s.

3/4

4/4

6/4

3/16

2/4

3/4

mp

m.d.

mp

p

p

-24¢
-16¢
-20¢

208

3/4

9/32

2/4

6/4

pp

pp

-24¢
-20¢
-10¢

219

8va

3 16

2 4

3 8

5 32

2 4

f

-14¢
-20¢
-10¢

-14¢
-18¢
-20¢
-10¢

-18¢
-16¢
-20¢

224

8va

2 4

3 32

3 8

2 4

8va

ff

-24¢ -18¢
-22¢ +2¢
-16¢ +8¢
-20¢ -10¢



228 **7**
32

3
4

8va

3
16

16

fff

Musical score for measures 228-230. Measure 228 is a whole rest. Measure 229 features a triplet of eighth notes in the bass clef and a triplet of sixteenth notes in the treble clef, with an *8va* marking above the treble staff. Measure 230 is a whole rest. The piece ends with a double bar line.

-24¢ -14¢
-18¢ -22¢
-20¢ -16¢
-10¢ -20¢



231 **16**

8va

9
32

16

fff

Musical score for measures 231-233. Measure 231 features a triplet of eighth notes in the bass clef and a triplet of sixteenth notes in the treble clef, with an *8va* marking above the treble staff. Measure 232 features a triplet of eighth notes in the bass clef and a triplet of sixteenth notes in the treble clef. Measure 233 is a whole rest. The piece ends with a double bar line.

-24¢
-22¢
-16¢
-20¢



238 $\frac{11}{32}$ 8^{va}

-24¢
-22¢
-16¢
-20¢



240 $\frac{3}{32}$ $\frac{5}{4}$ $\frac{3}{32}$