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UE Universal Edition

Georg Friedrich Haas

1. Streichquartett
(1997)

Partitur

UE 31 138

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Partitur

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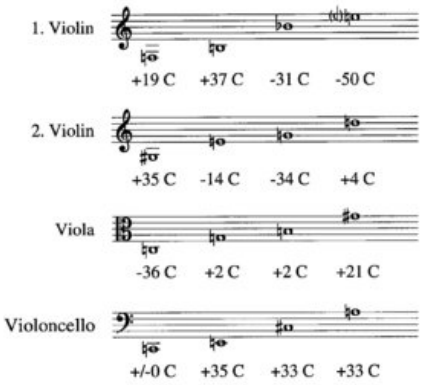
UE 31 138

Tuning system

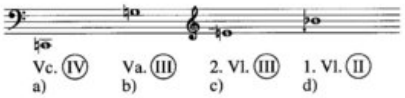
The tuning system based on four chords. Difference from temperated pitch in cents.



Each chord is composed of four different notes: fundamental, perfect fifth, major third, and natural (minor) seventh (plus octave transpositions). Each tone is played by a different instrument; all chord tones are played on open strings. Thus, in all there are 16 pitches. These 16 pitches are preproduced on the accompanying CD.

It is also possible to tune the instruments by ear. The chords and suggestions for tuning follow (all intervals are tuned in just intonation).

chord I



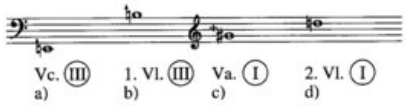
a) First, Cello tunes its low C as shown (= IV. string).

b) Next, Viola tunes the interval octave + fifth (= III. string).

c) Then, Violin 2 tunes the interval two octaves + major third (= III. string).

d) Finally, Violin 1 tunes the interval two octaves + minor seventh (= II. string).

chord II



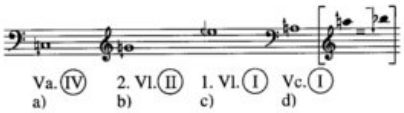
Using Viola's thus tuned string as a basis, Violin 2 sounds the interval octave + fifth on its I. string (example "d") of Illustration "chord II" above). This pitch is the seventh harmonic (two octaves + minor seventh) of chord II, to be tuned in the following way:

a) Cello tunes the fundamental (= III. string).

b) Violin 1 tunes octave + fifth (= III. string).

c) Viola tunes two octaves + major third (= I. string).

chord III



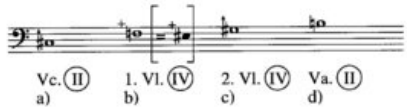
Viola now tunes its open IV. string to sound a sixth of a tone lower than the second harmonic of Cello's IV. string, i.e., two-and-a-half beats per second (example "a") of Illustration "chord III" above). This pitch is the fundamental of chord III, to be tuned as follows:

b) Violin 2 tunes octave + fifth (= II. string).

c) Violin 1 tunes two octaves + major third (= I. string).

d) Cello tunes natural minor seventh (= two octaves lower than the seventh harmonic; I. string).

chord IV



Taking as a basis the III. string of Violin 1 as tuned in chord II, viola tunes its II. string a sixth of a tone lower, i.e., five beats per second (example "d") of Illustration "chord IV" above). This pitch is the natural minor seventh (two octaves lower than the seventh harmonic) of chord IV, to be tuned as follows:

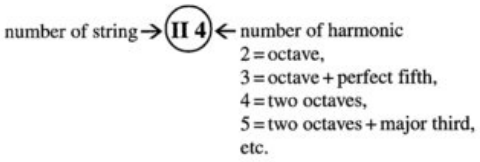
a) Cello tunes its II. string as shown. This is the fundamental of chord IV.

b) Violin 1 tunes a major third (= two octaves lower than the fifth harmonic; IV. string).

c) Violin 2 tunes up a perfect fifth (= one octave lower than the third harmonic; IV. string).

Notation:

number of string → (II 4) ← number of harmonic
2 = octave,
3 = octave + perfect fifth,
4 = two octaves,
5 = two octaves + major third,
etc.



+♮, -♮, +♭, -♭, +♯, -♯	a twelfth of tone higher/lower
♮, ♮, ♭ etc.	a sixth of tone higher/lower
♯, 𝅗𝅥	a quartertone higher/lower

The notated pitches are approximations and the result of performing the natural flageolets. The pitches in the score always indicate the real sounding pitch.

	tremolo
	gradually slow the movements of the bow, from *tremolo* to the notated rhythm
	accelerate the movements of the bow, from the notated rhythm to *tremolo*
acc. →	accelerando to…
rit. →	ritardando to…
→ ♩ = 60	accelerando/ritardando to ♩ = 60

The same principle of notation is also used for dynamics.

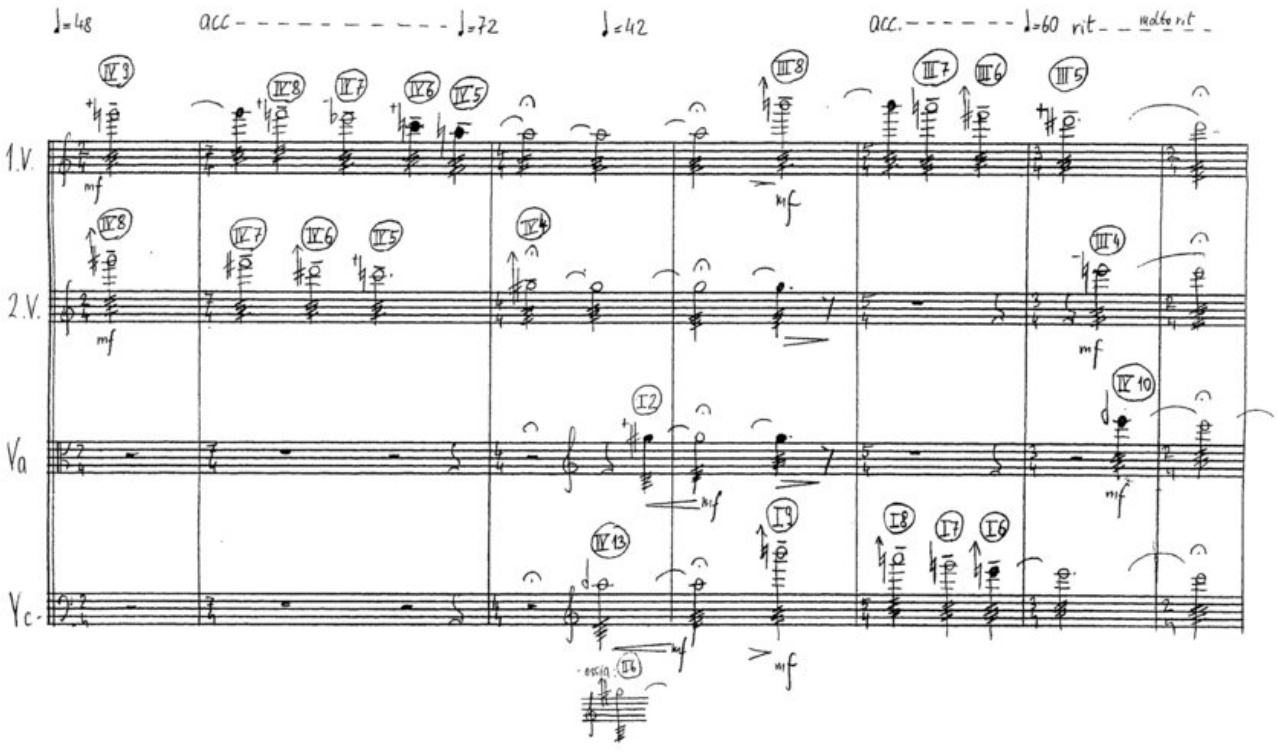
rep. ad lib.	repeat as often as necessary to end simultaneously with the other instruments
3:2 (just intonation)	intonation in exact perfect fifths

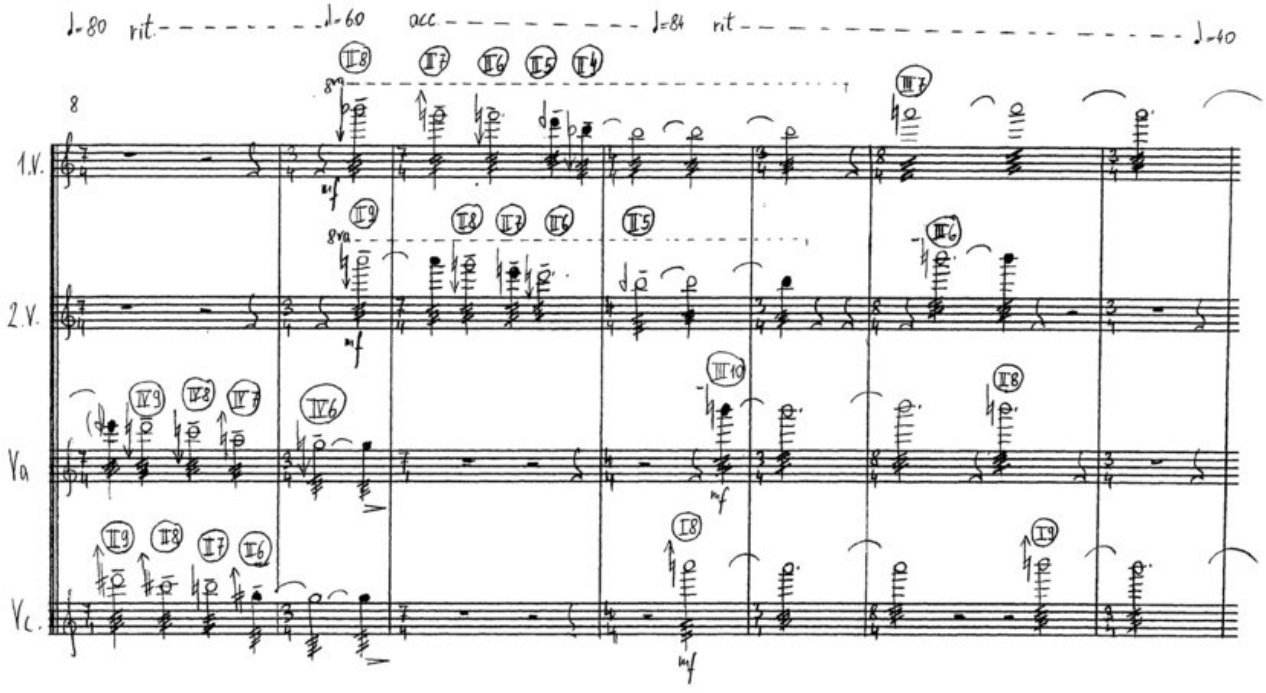
difference to open string → **+ 1/6** **4/sec** ← resulting number of beats per second

1. streichquartett

(1997)

georg friedrich haas





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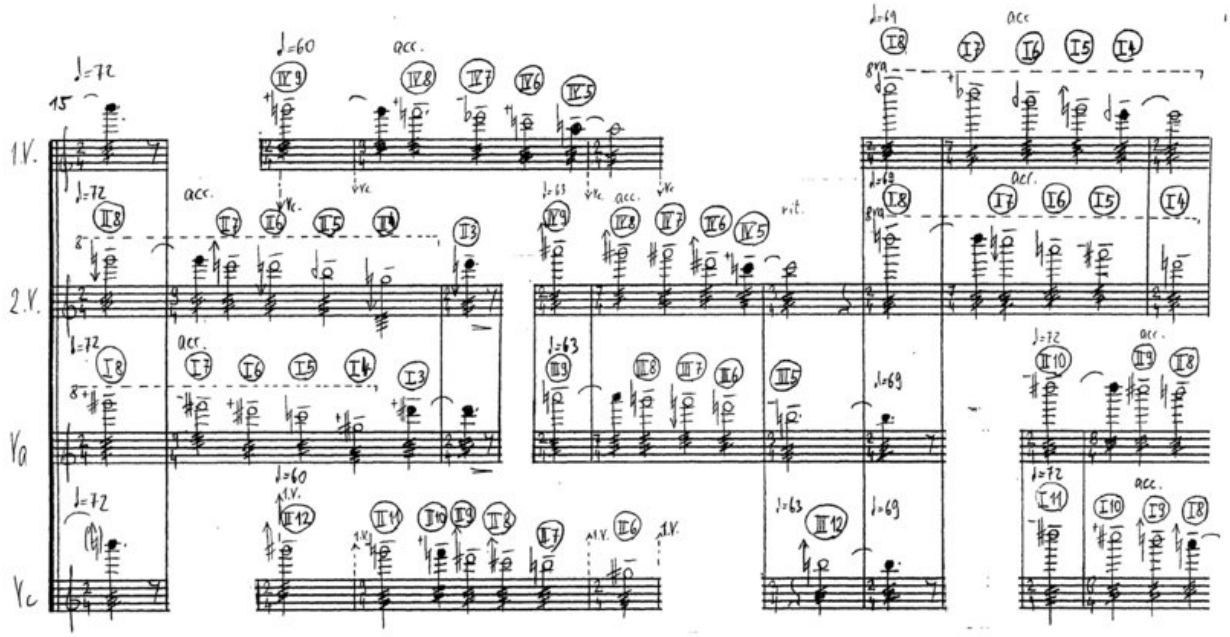
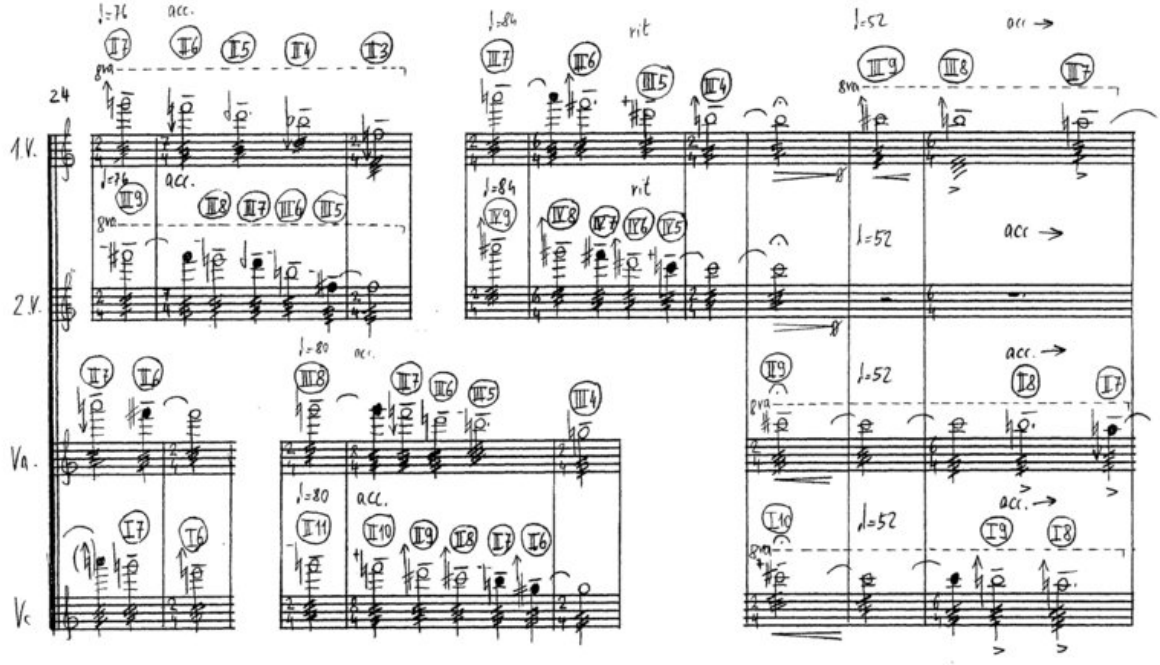
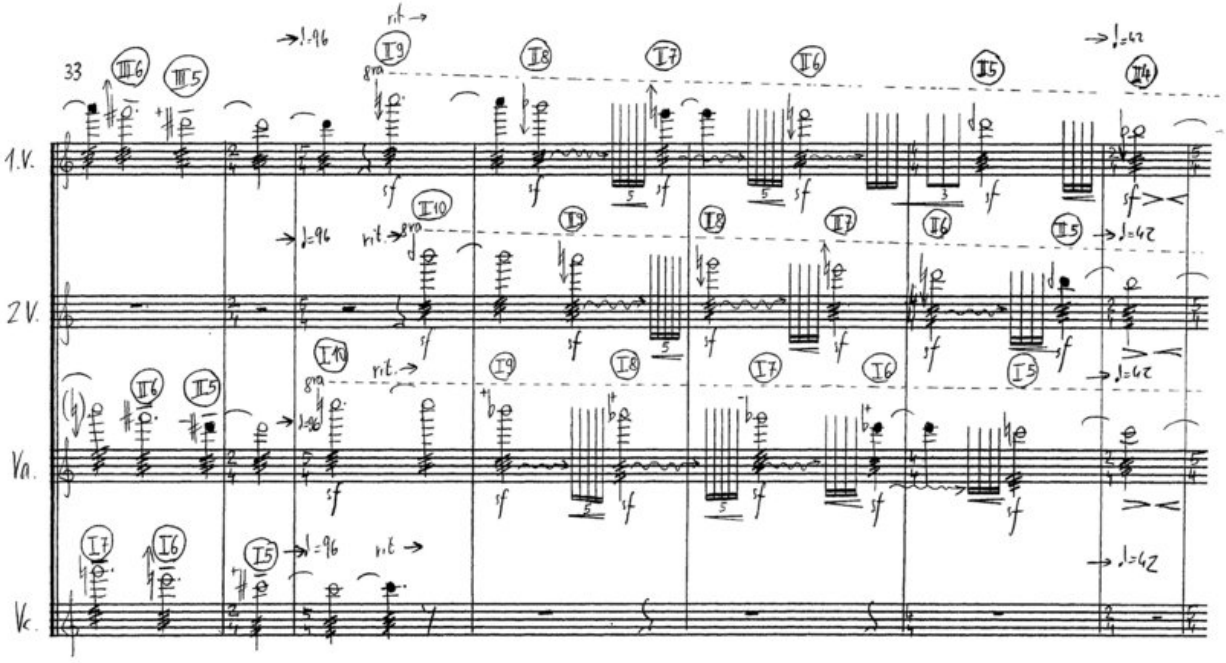
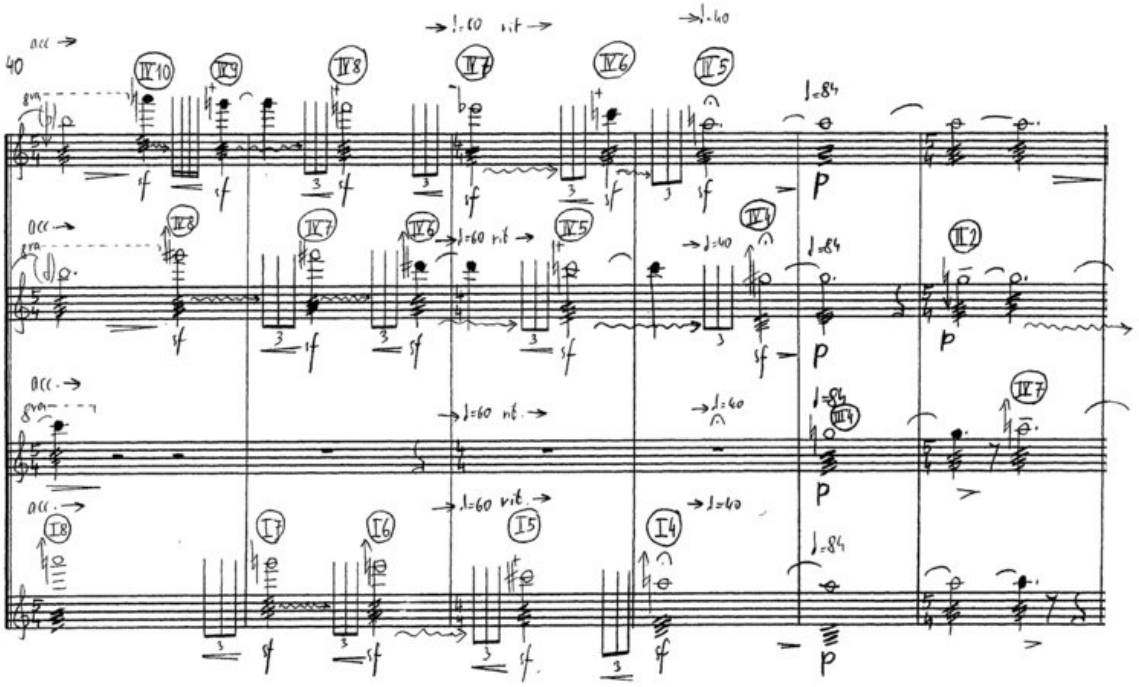
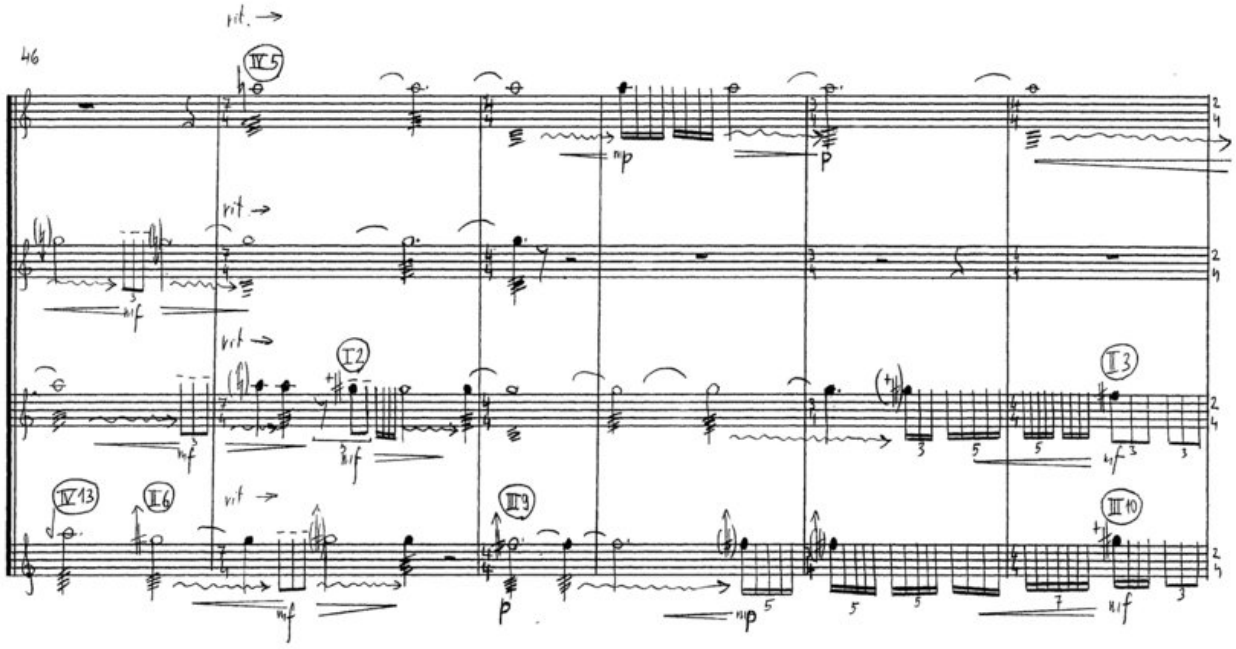
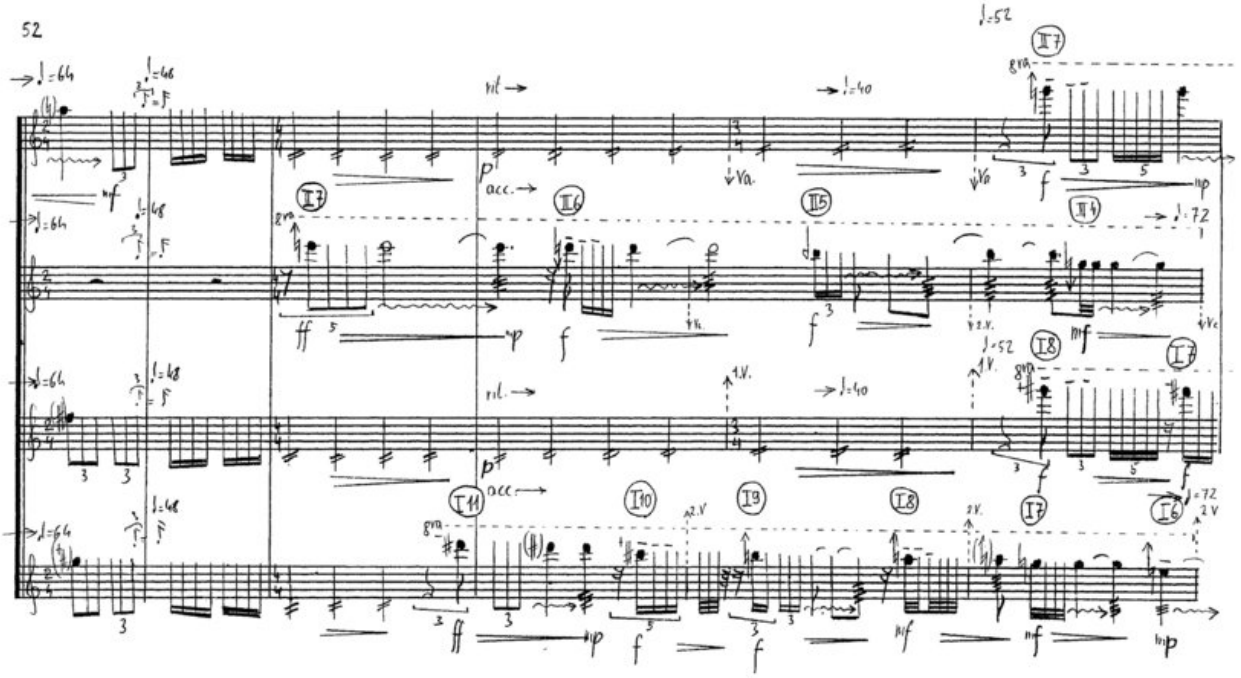

15
1.V.
2.V.
Va
Vc
acc.
rit.

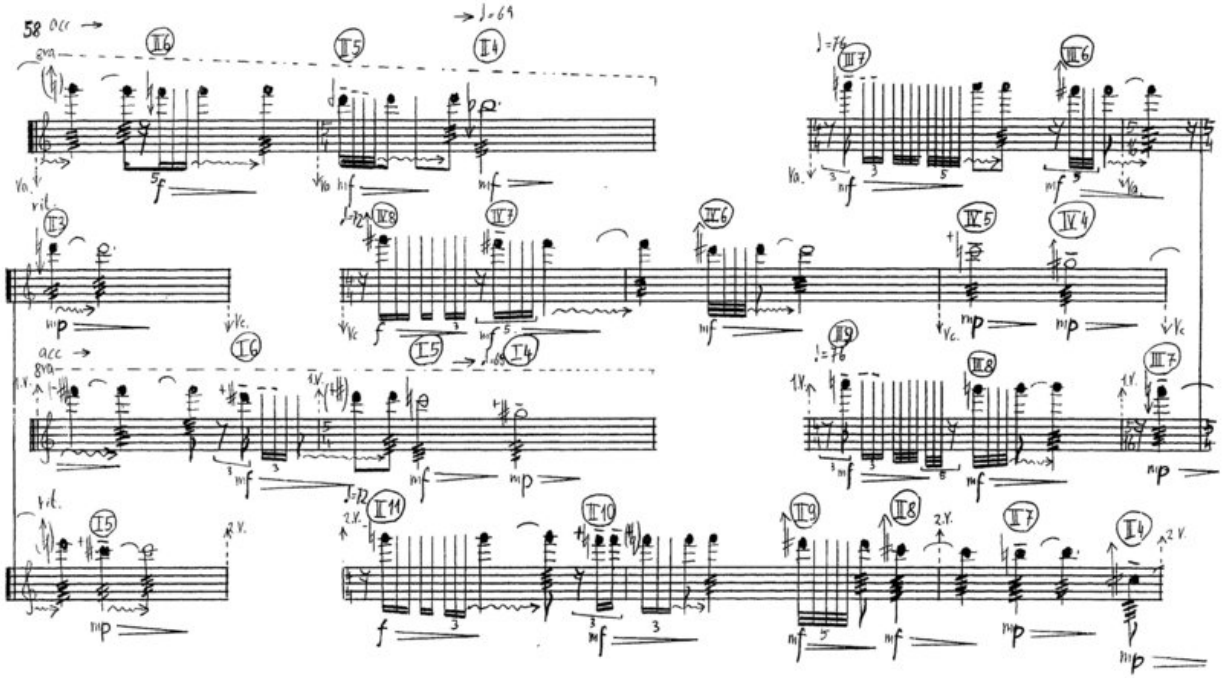

24
1.V.
2.V.
Va
Vc
acc.
rit

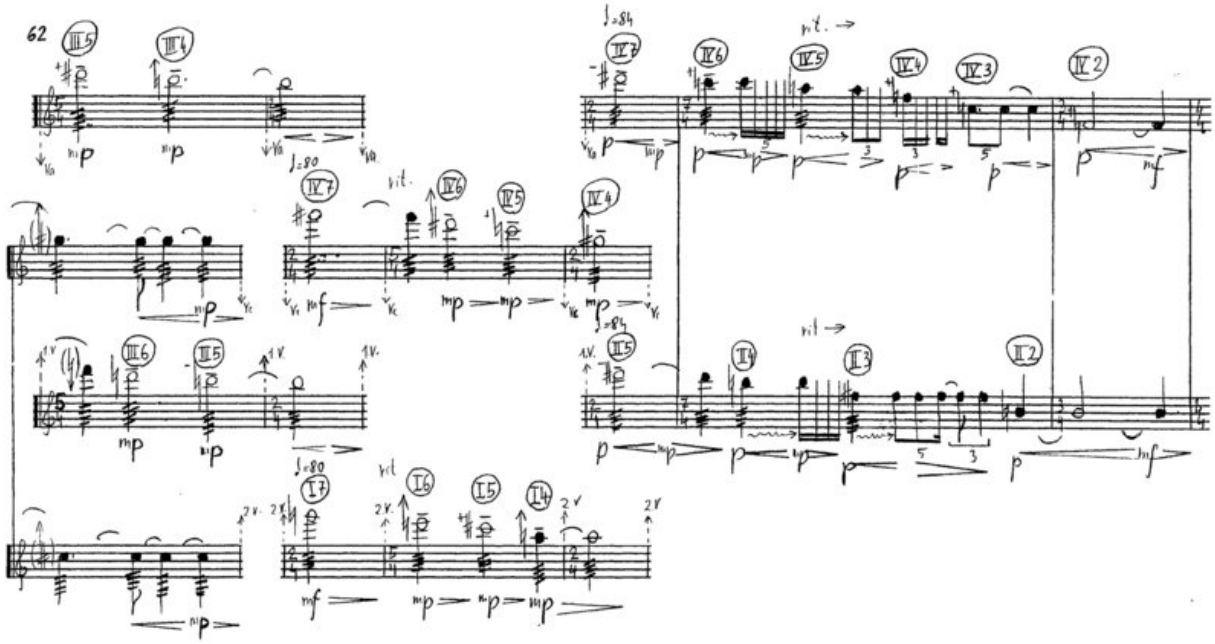

33
1.V.
2V.
Va.
Vc.
rit.
8va
sf

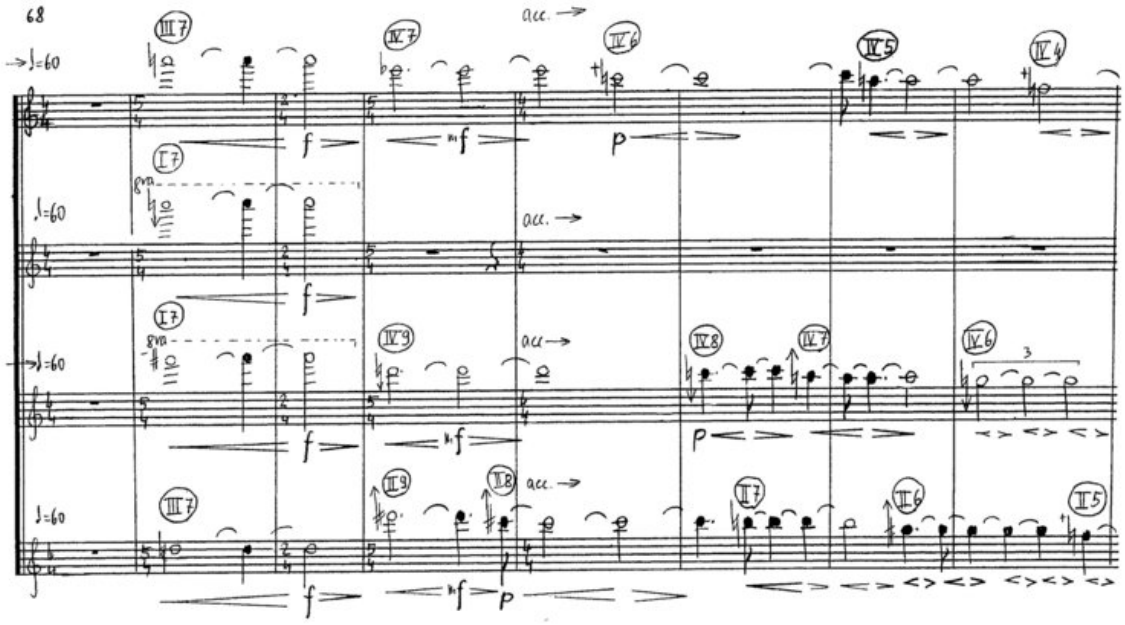

40
acc.
8va
rit.
sf
p

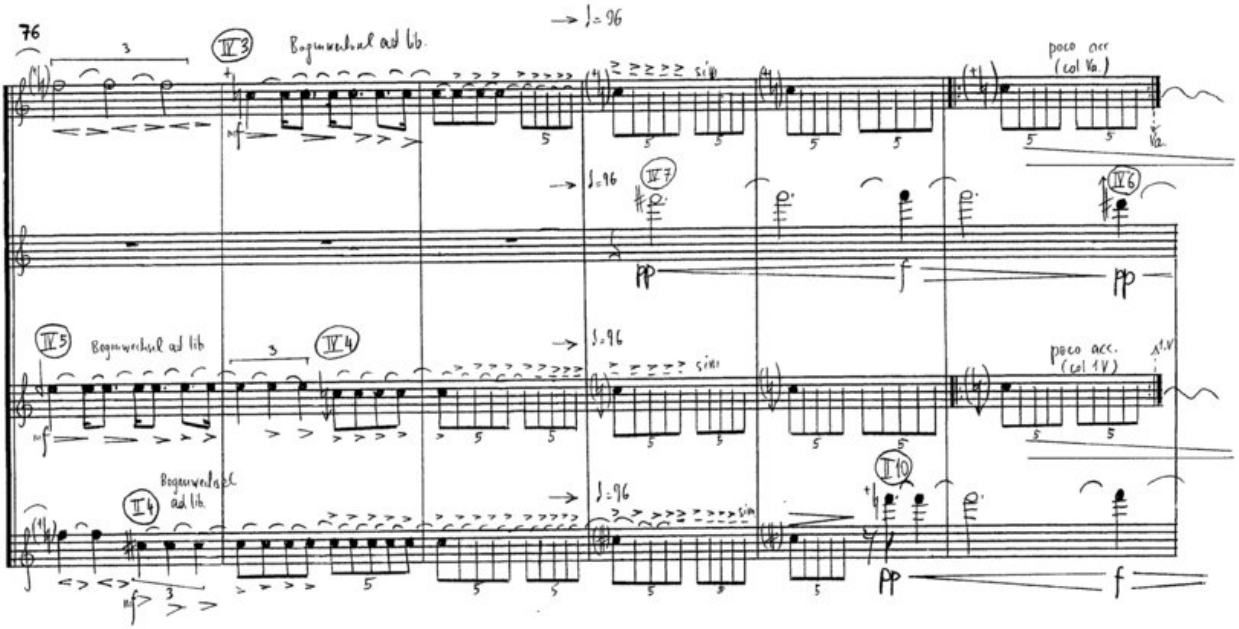

46
rit.
IV 5
mp
p
mf
I 2
II 3
IV 13
II 6
III 9
III 10

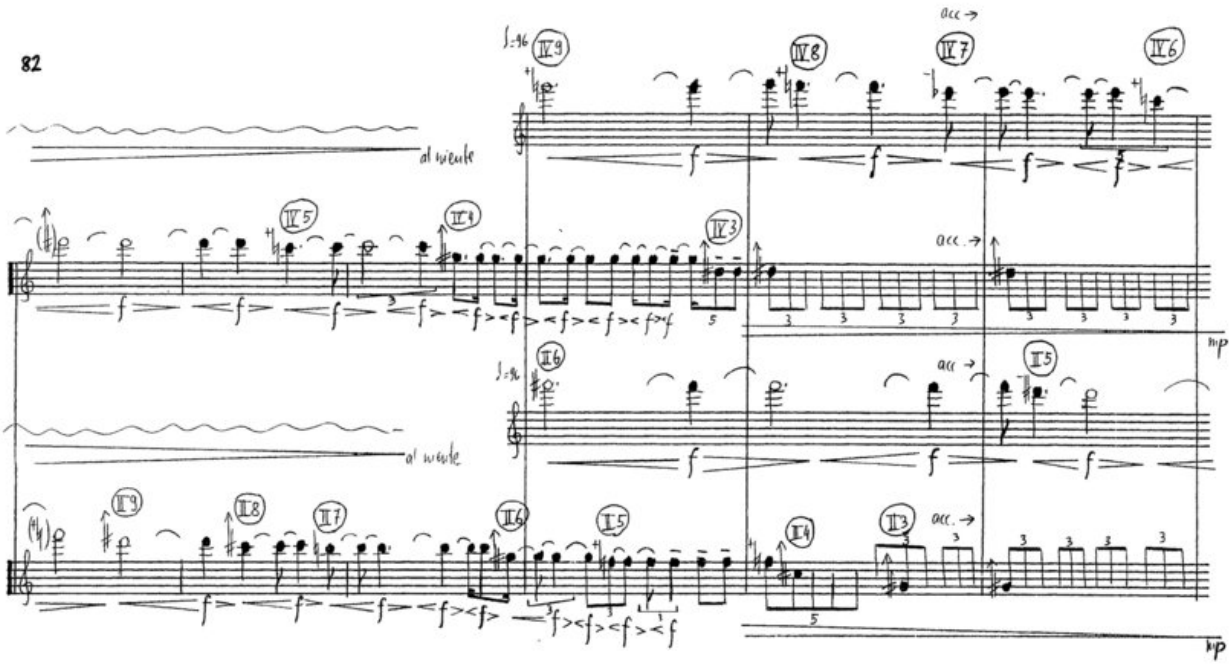

52
♩=64
♩=48
♩=40
♩=52
♩=72
rit.
acc.
Va.
ff
mp
f
mf
II 7
II 6
II 5
II 4
I 8
I 7
I 11
I 10
I 9
I 6

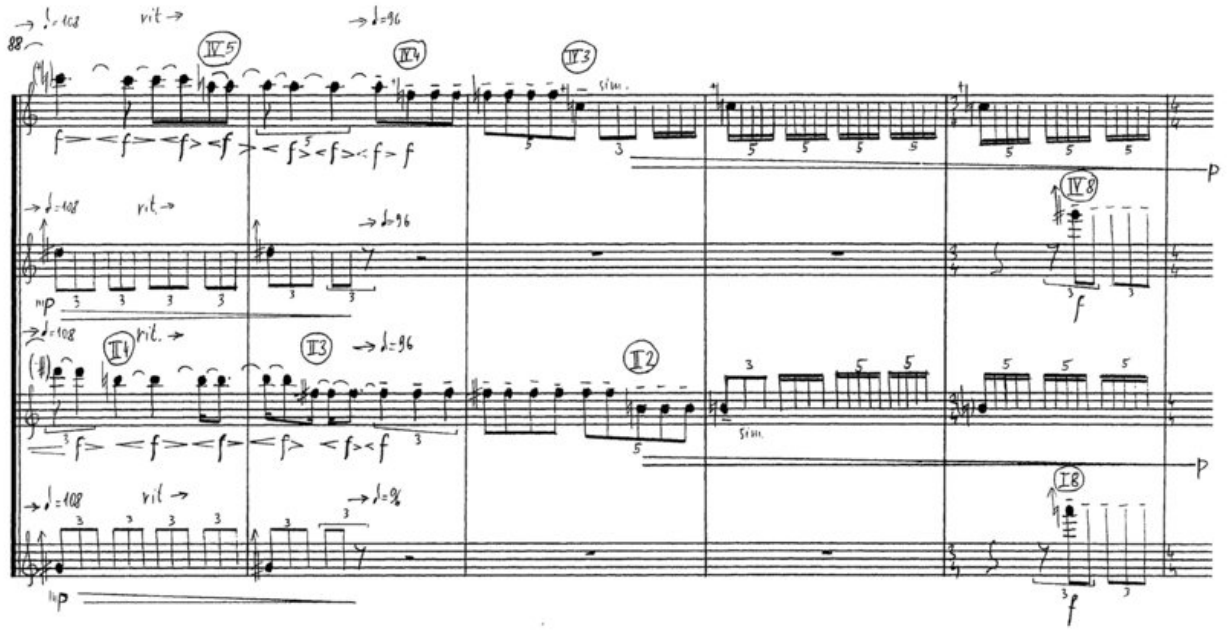


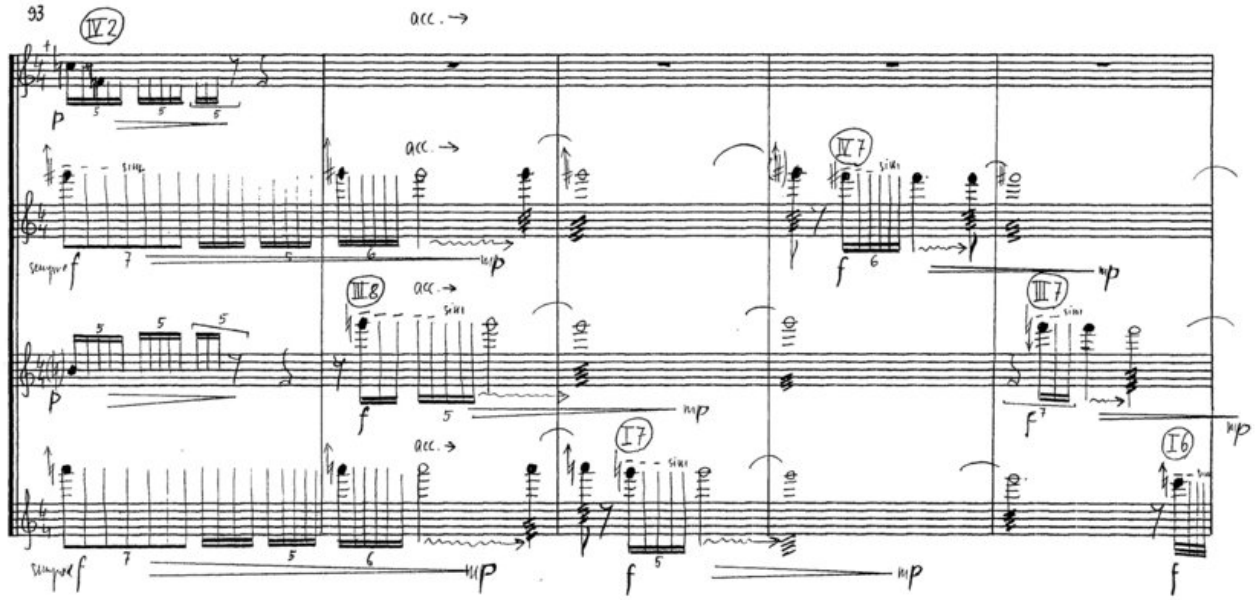


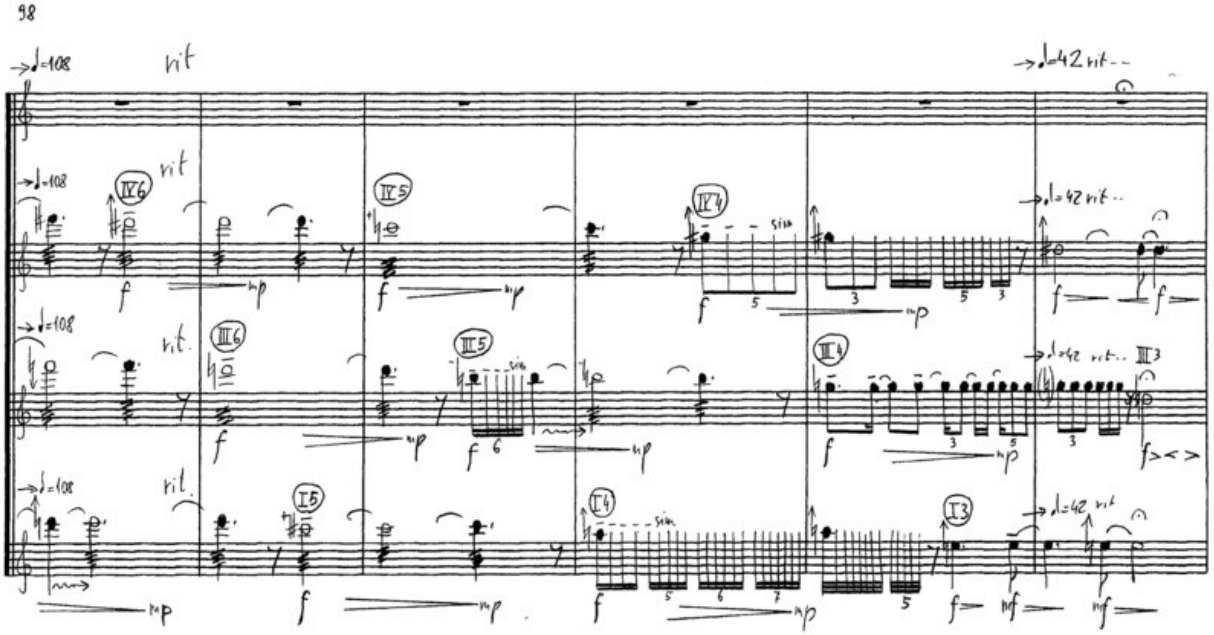

68
acc.
8va
acc.
8va
acc.
acc.

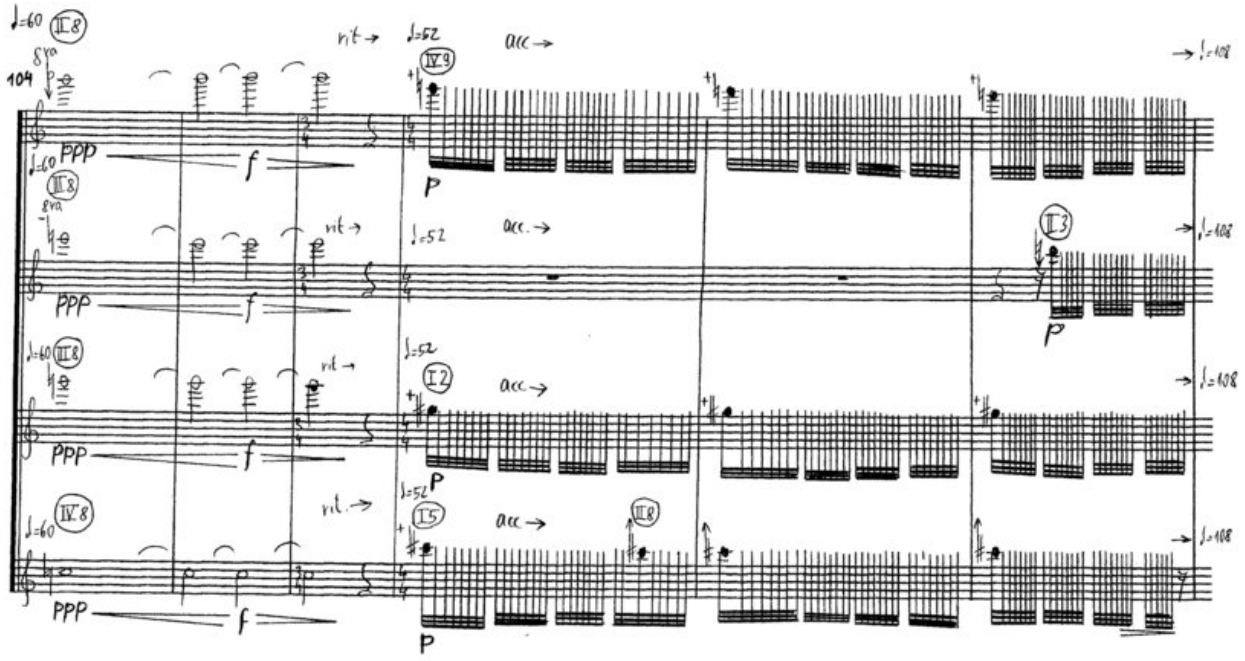

76
Bogenwechsel ad lib.
poco acc
(col Va.)
Bogenwechsel ad lib
poco acc.
(col 1V)
Bogenwechsel ad lib.

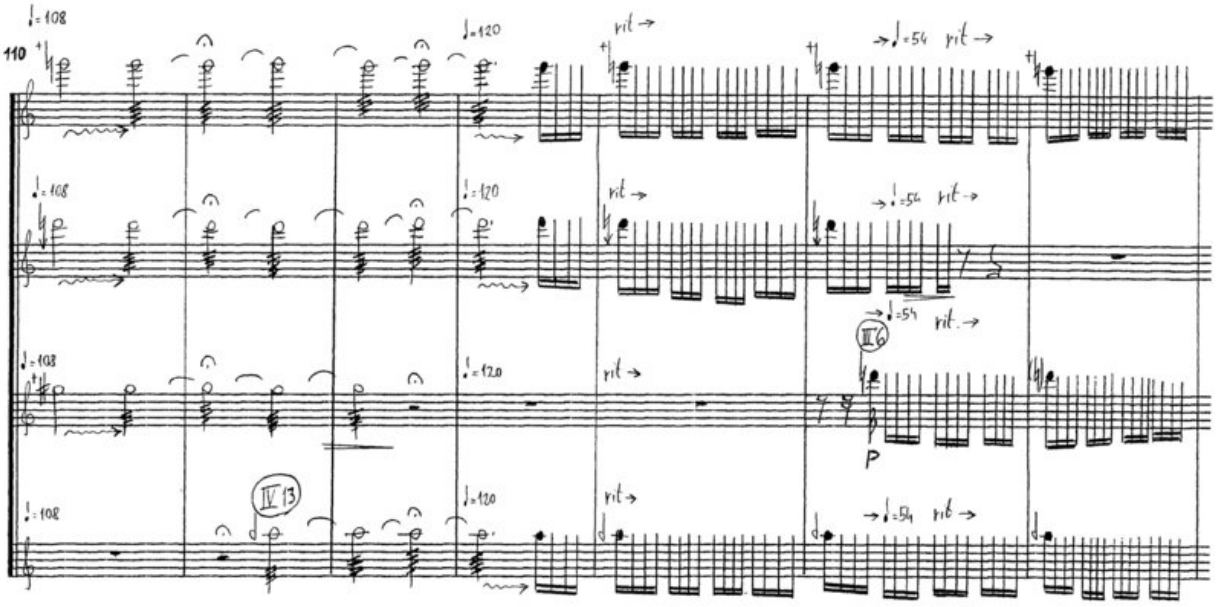

82
al niente
acc.
mp

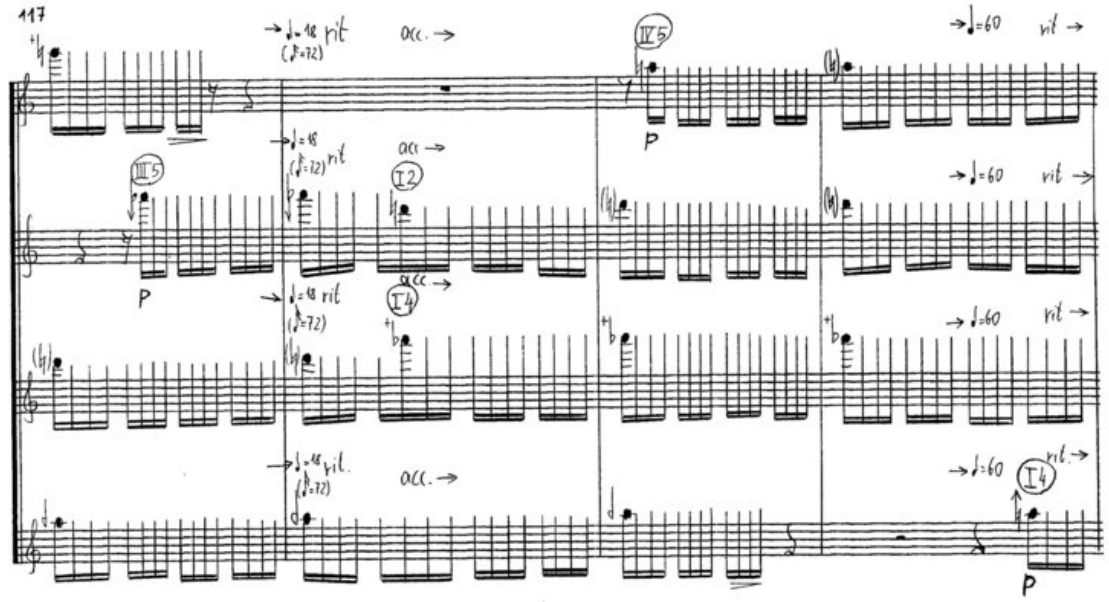

88
rit.
sim.
p
mp

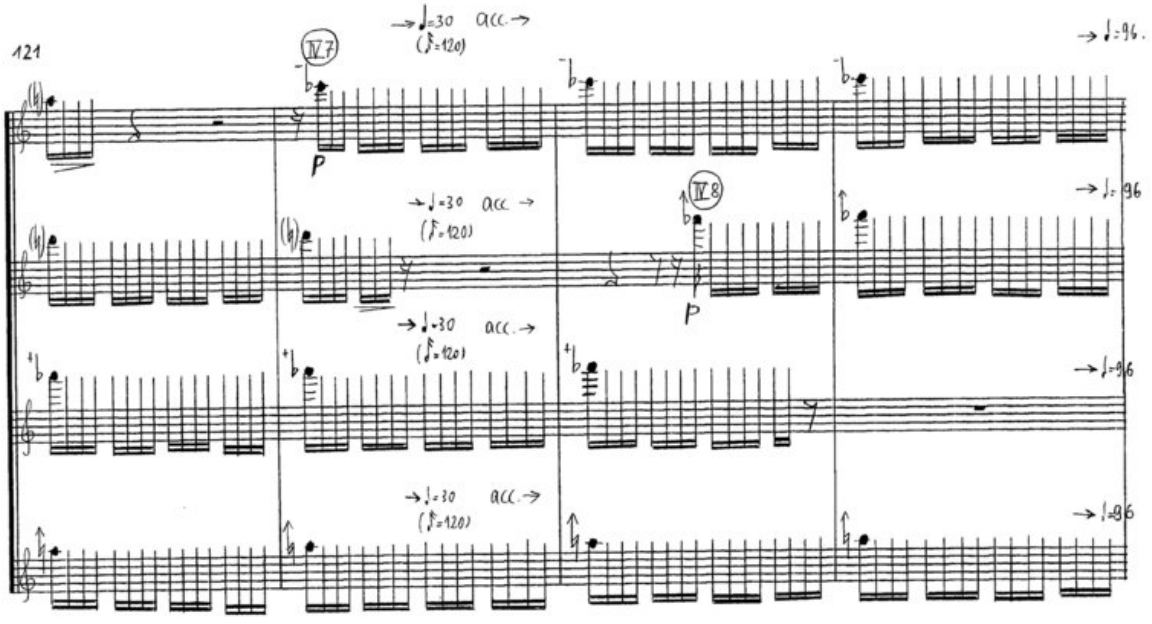

93
acc.→
IV 2
IV 7
III 8
III 7
I 7
I 6
sempre f
mp
f
p

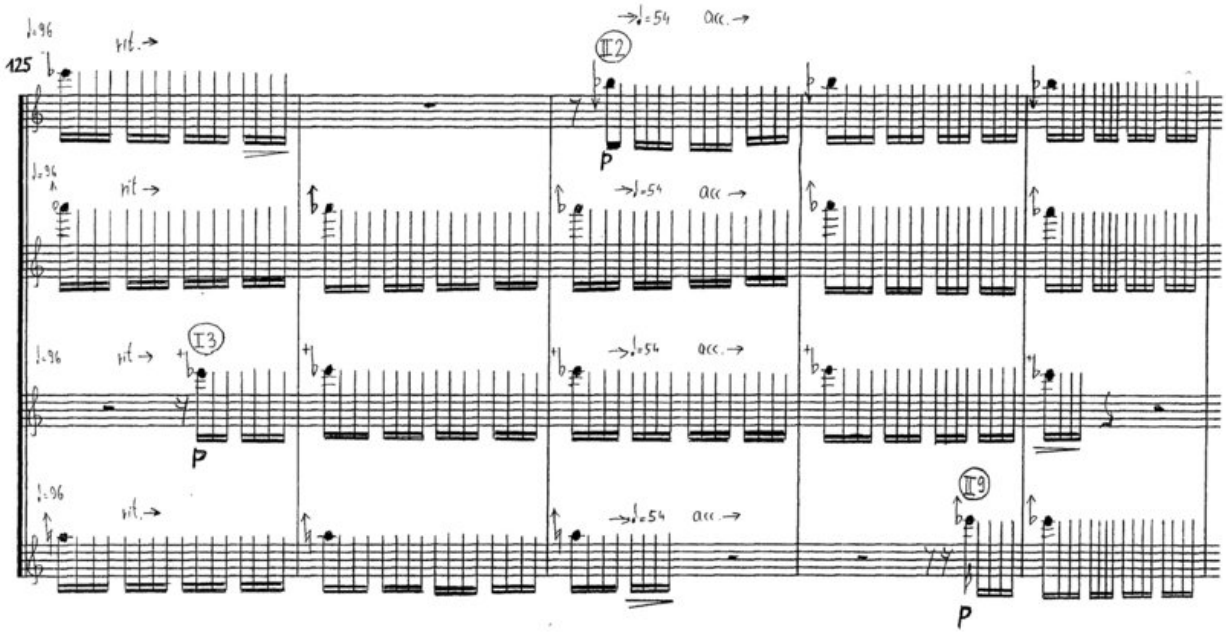

98
♩=108
rit
♩=42 rit.
IV 6
IV 5
IV 4
III 6
III 5
III 4
III 3
I 5
I 4
I 3
mp
f
mf

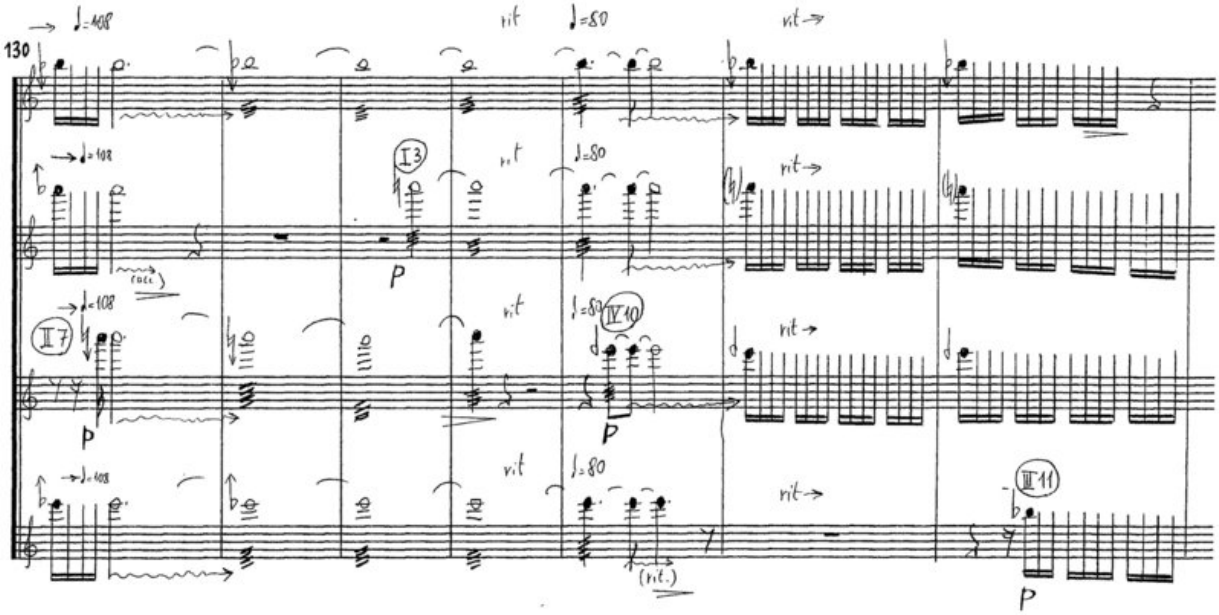

104
♩=60
II 8
8va
rit →
♩=52
IV 9
acc →
→ ♩=108
PPP
f
P
♩=60
III 8
8va
rit →
♩=52
acc. →
II 3
→ ♩=108
PPP
f
P
♩=60
III 8
rit →
♩=52
I 2
acc →
→ ♩=108
PPP
f
P
♩=60
IV 8
rit. →
♩=52
I 5
acc →
II 8
→ ♩=108
PPP
f
P

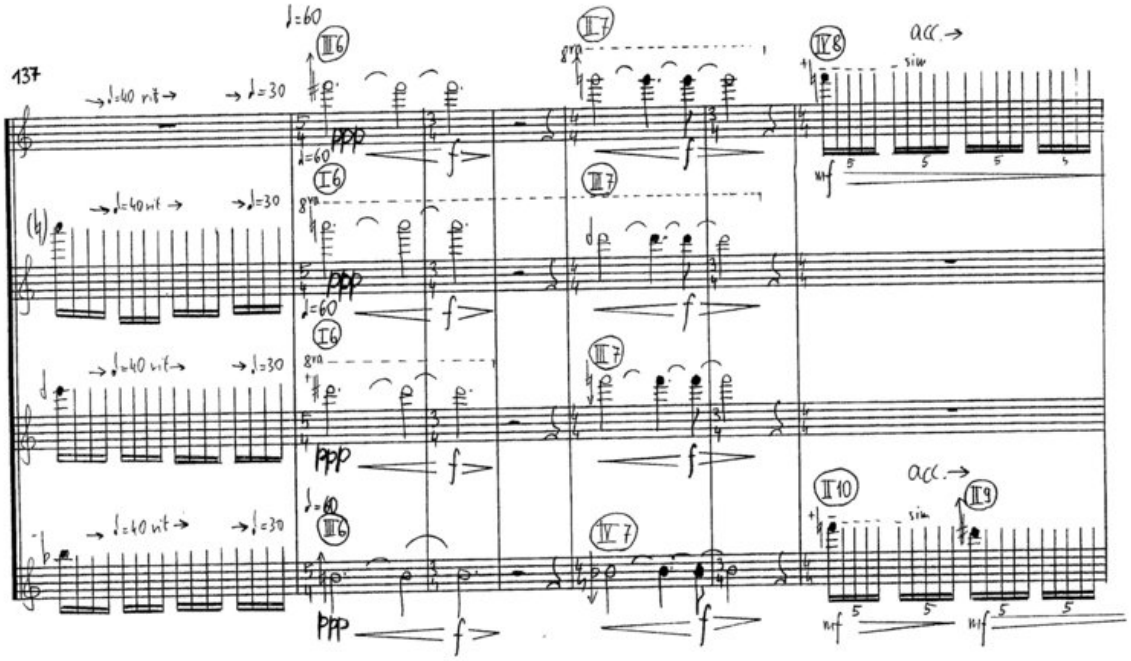

110
♩=108
♩=120
rit →
→ ♩=54
rit →
♩=108
♩=120
rit →
→ ♩=54
rit →
→ ♩=54
rit. →
♩=108
♩=120
rit →
II 6
P
♩=108
IV 13
♩=120
rit →
→ ♩=54
rit →

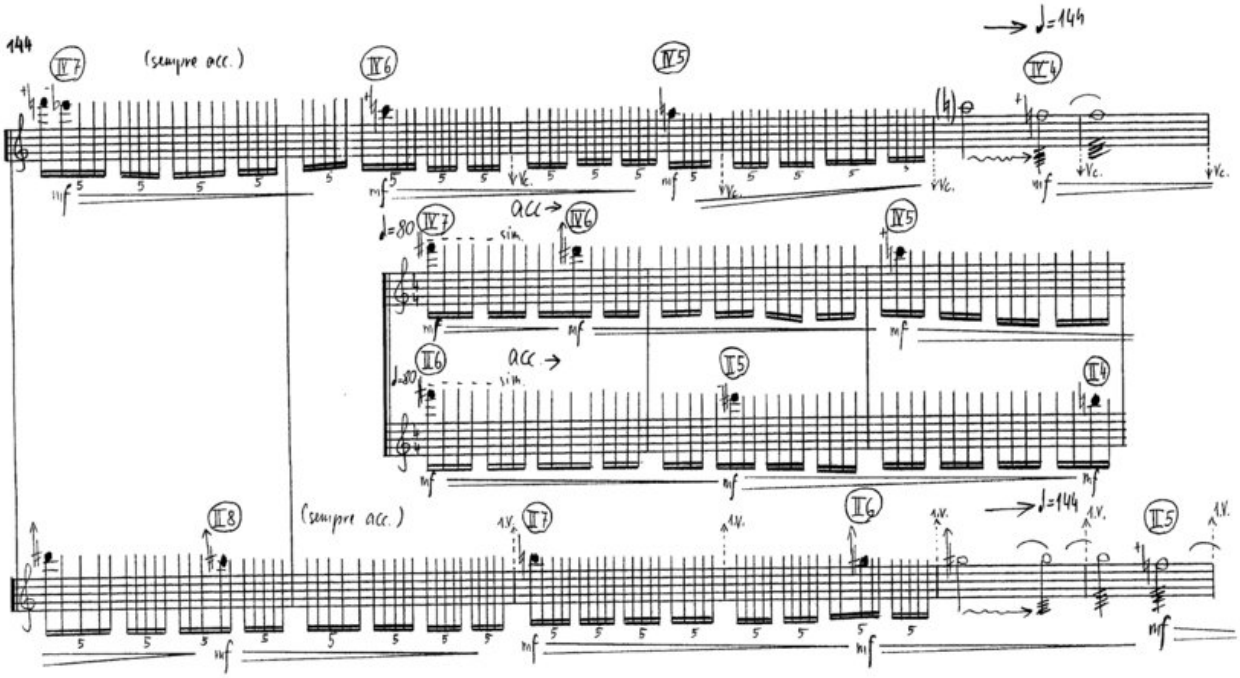

117
→♩=18 rit
(♪=72)
acc. →
IV 5
→♩=60 rit →
III 5
I 2
I 4
P

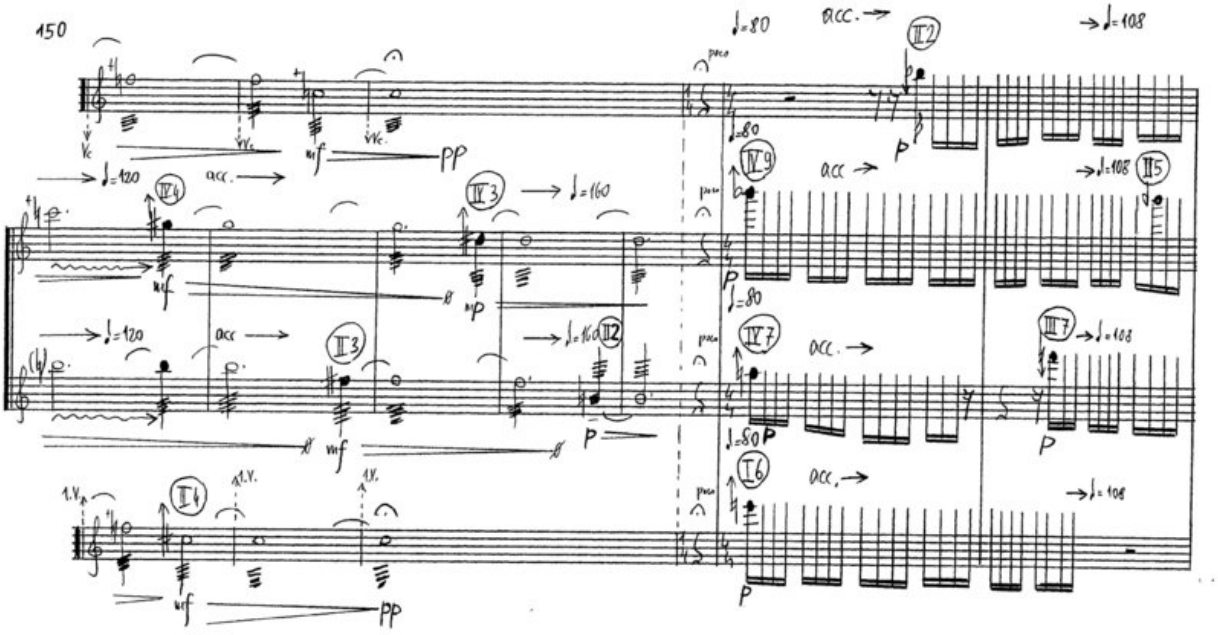

121
→♩=30 acc. →
(♪=120)
IV 7
IV 8
→♩=96.
P

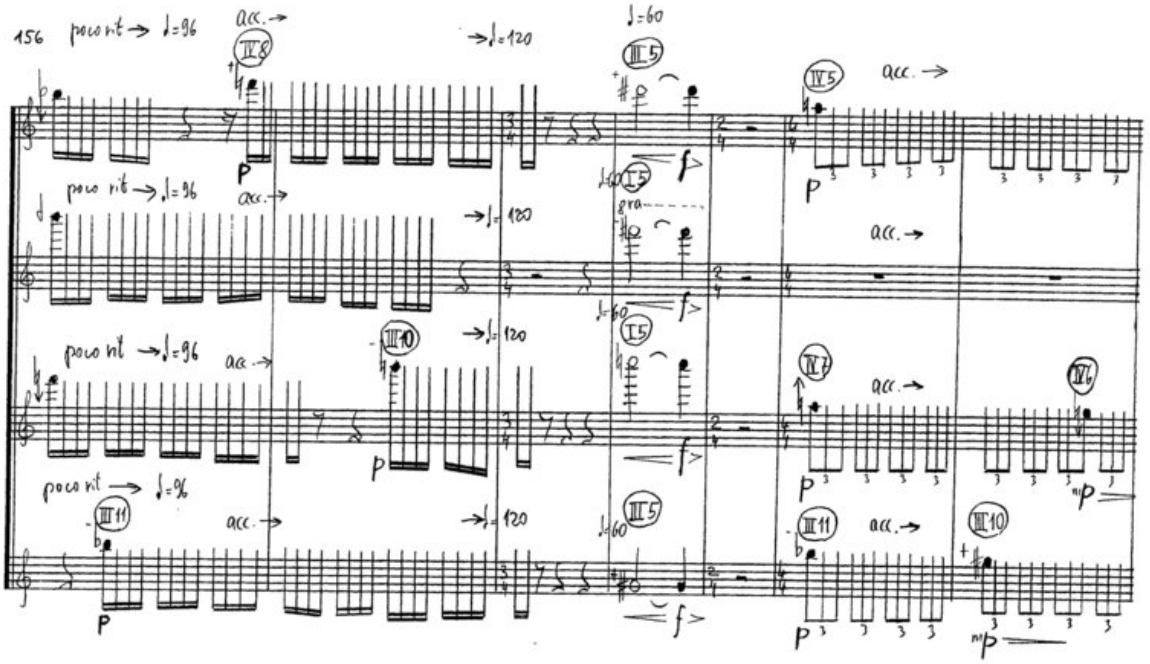

125
rit.
acc.
II 2
I 3
II 9
P

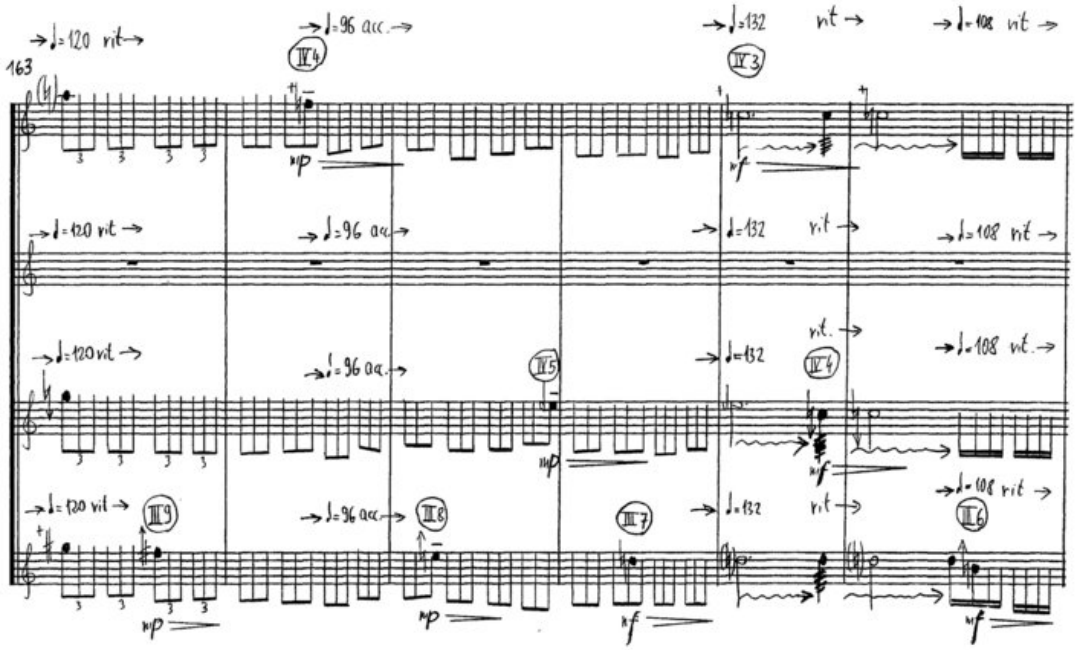

130
rit
acc.
I 3
II 7
IV 10
II 11
(rit.)
P

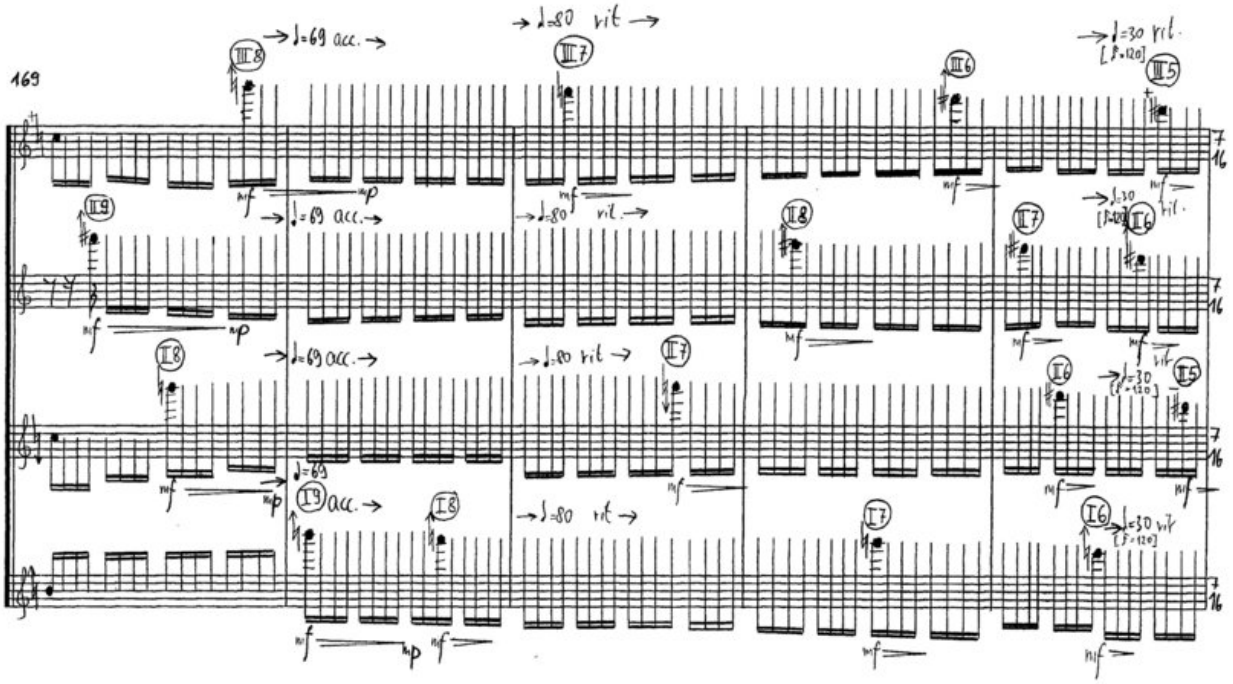

137
♩=60
♩=40 rit
♩=30
acc.
sim
ppp
f
mf

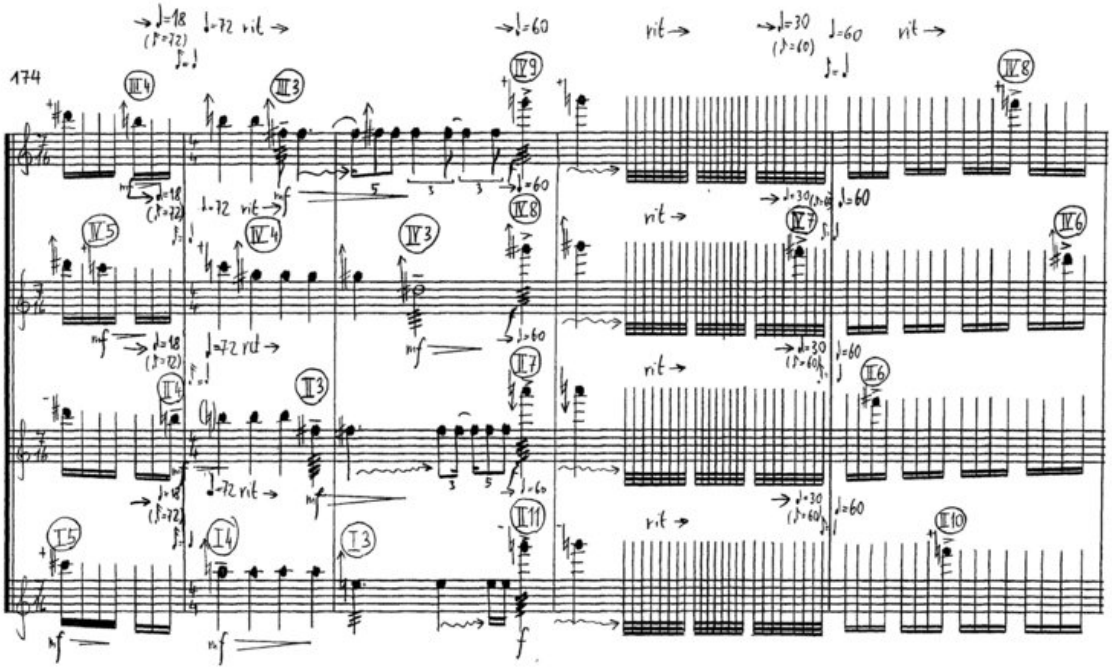

144
(sempre acc.)
♩=144
♩=80
acc.
sim.
mf
Vc.
1.V.

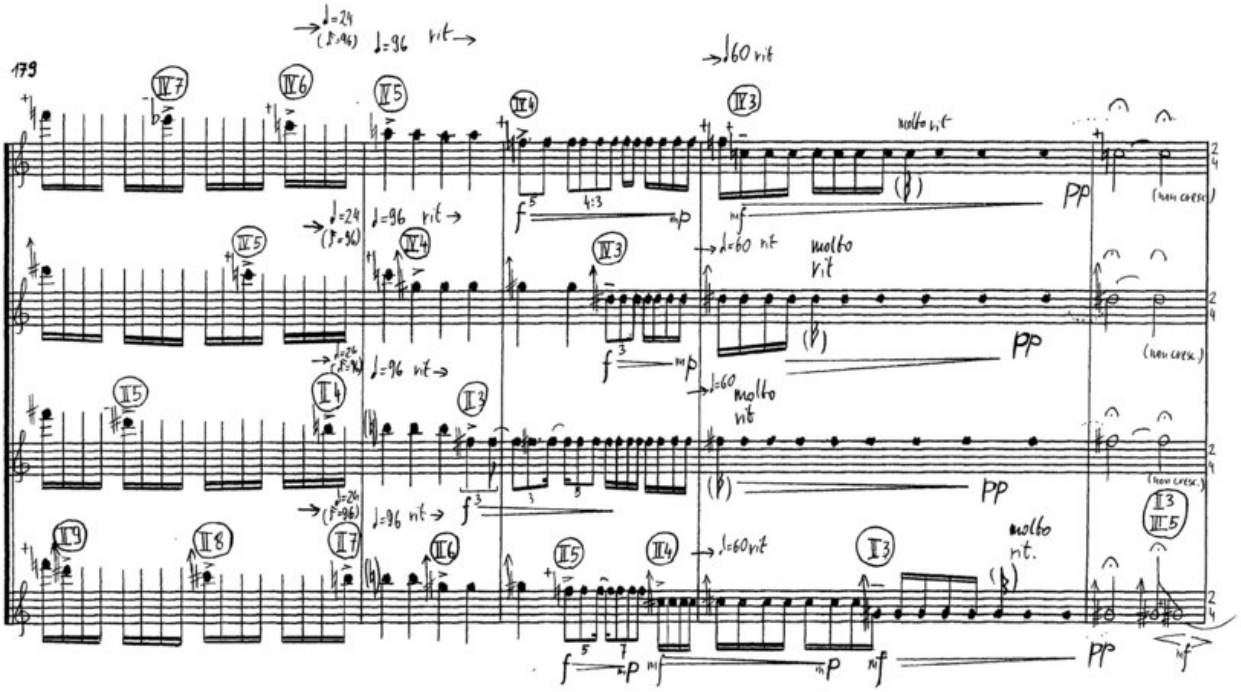

150
acc.
poco
pp
mf
mp
p

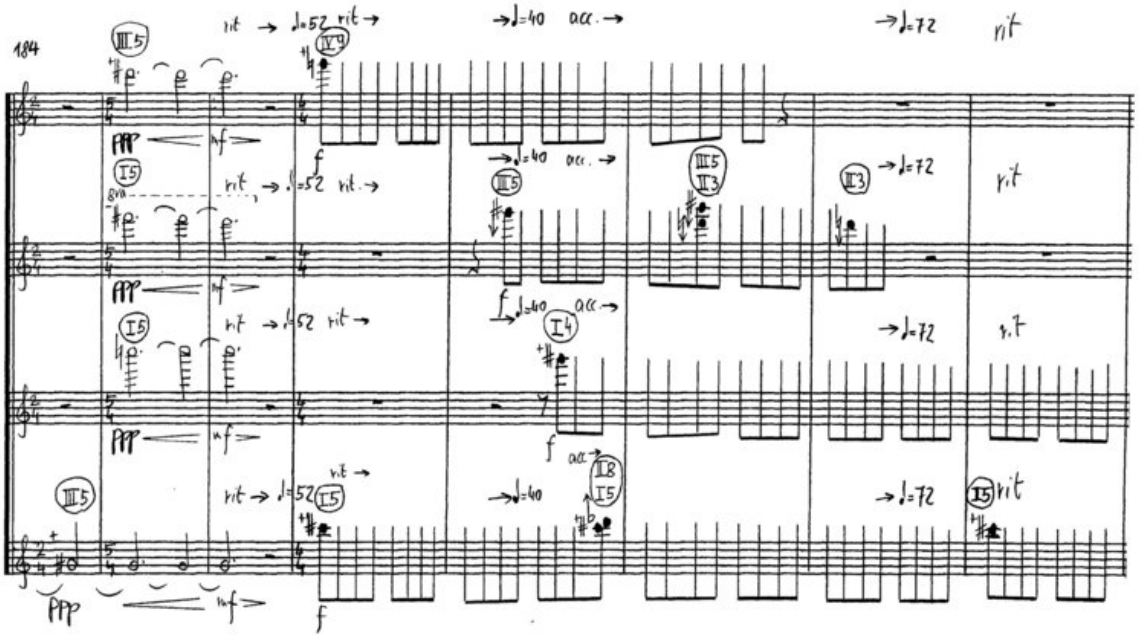

156
poco rit
acc.
p
f
mp

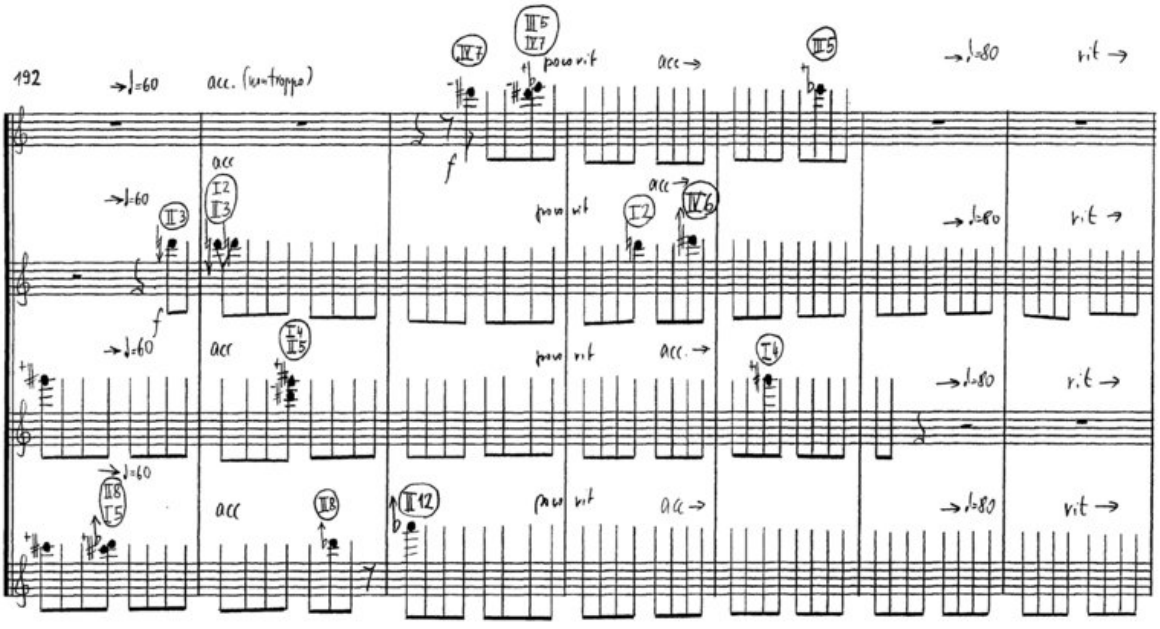

163
♩=120 rit
♩=96 acc.
♩=132
rit
♩=108 rit
mp
mf

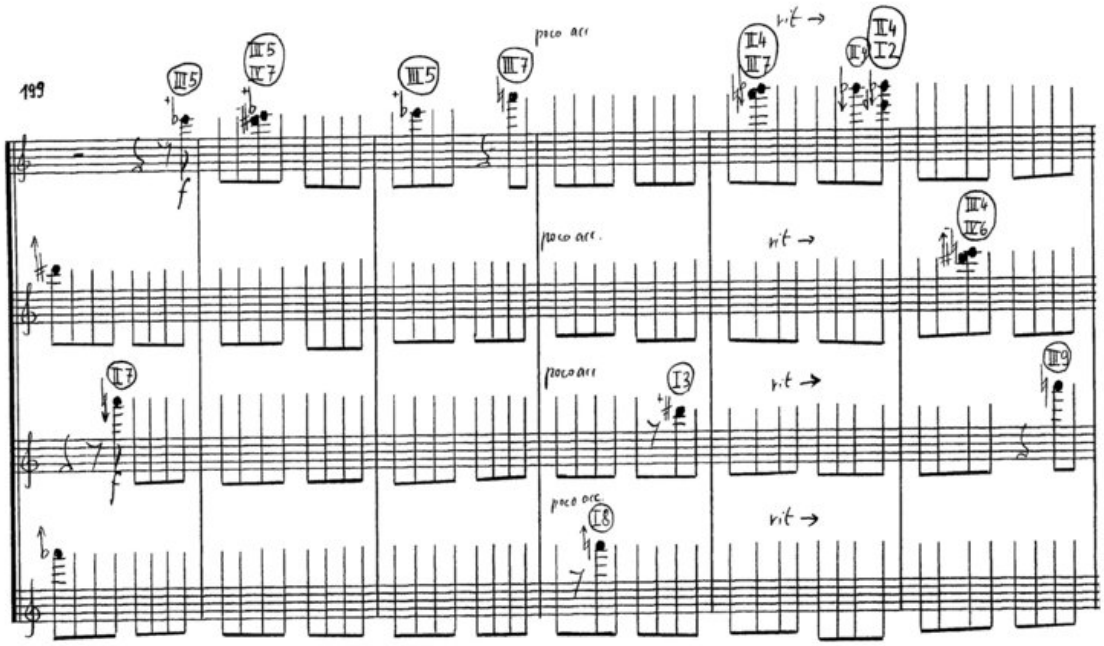

169
♩=69 acc.
♩=80 rit
♩=30 rit.
[♪=120]
mf
mp

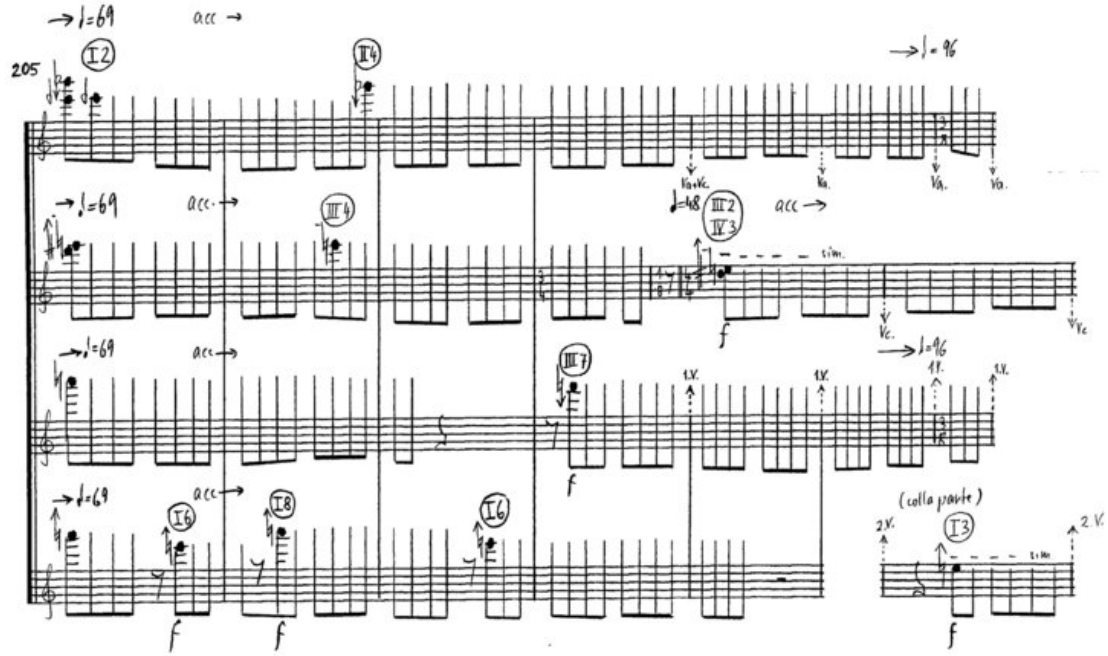

174
rit
rit
rit
rit
rit
rit
rit
rit
rit
rit
rit
rit

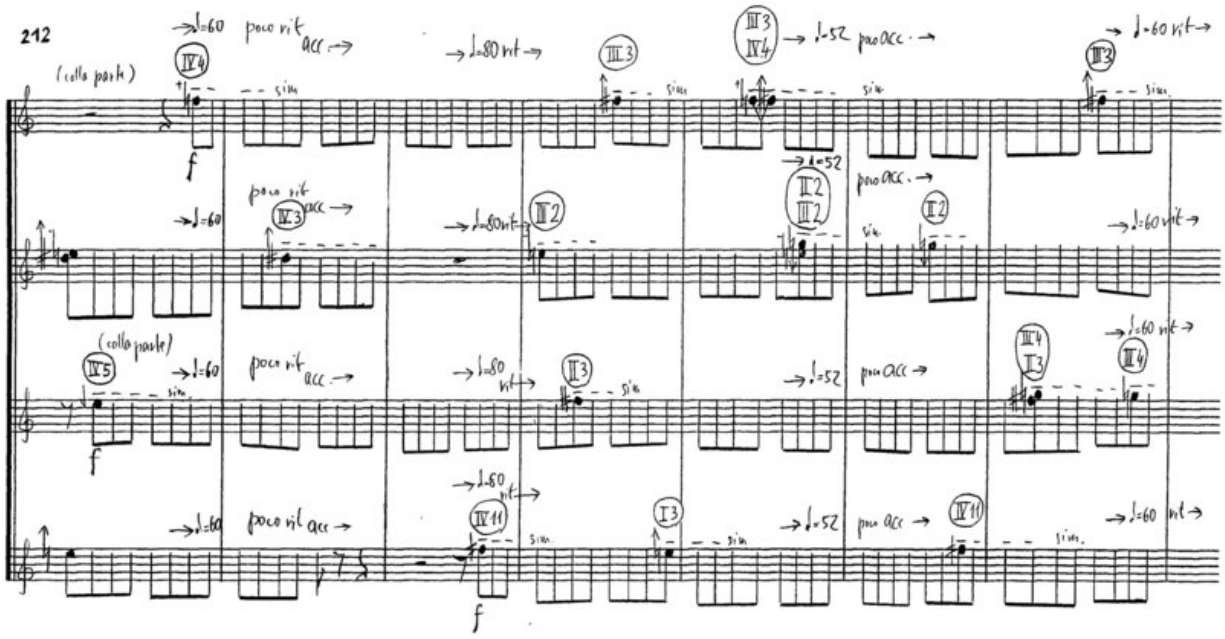

179
rit
rit
rit
rit
rit
rit
rit
rit
rit
rit
rit
rit
molto rit
molto rit
molto rit
molto rit.
pp
pp
pp
pp
pp
(non cresc.)
(non cresc.)
(non cresc.)

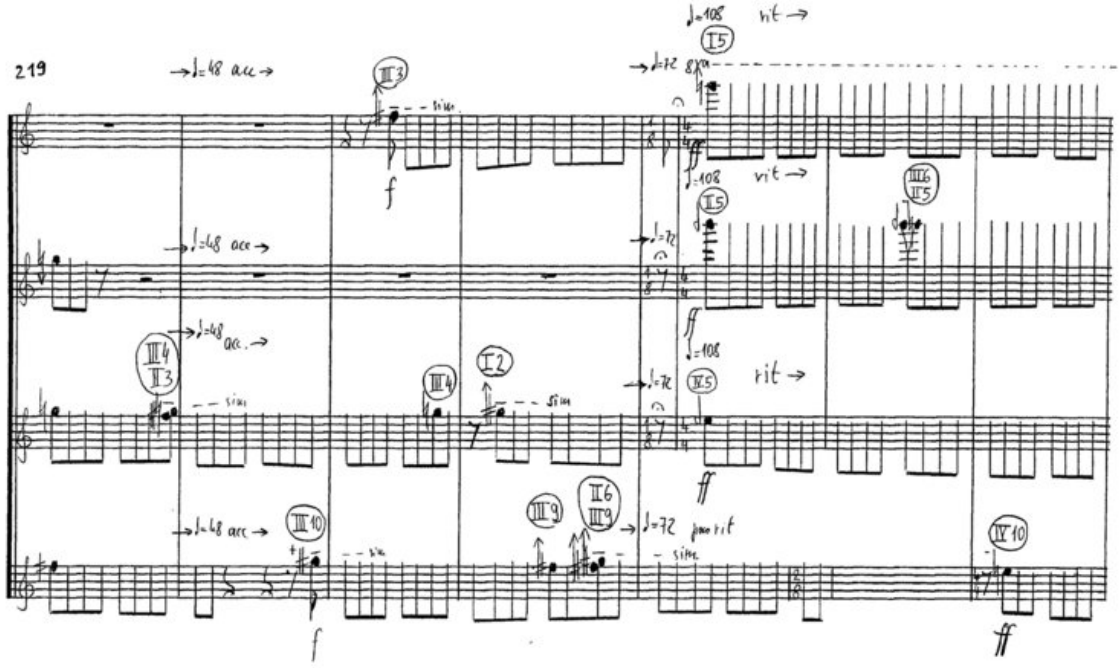

184
rit → ♩=52 rit →
→♩=40 acc. →
→♩=72 rit
ppp
mf
f

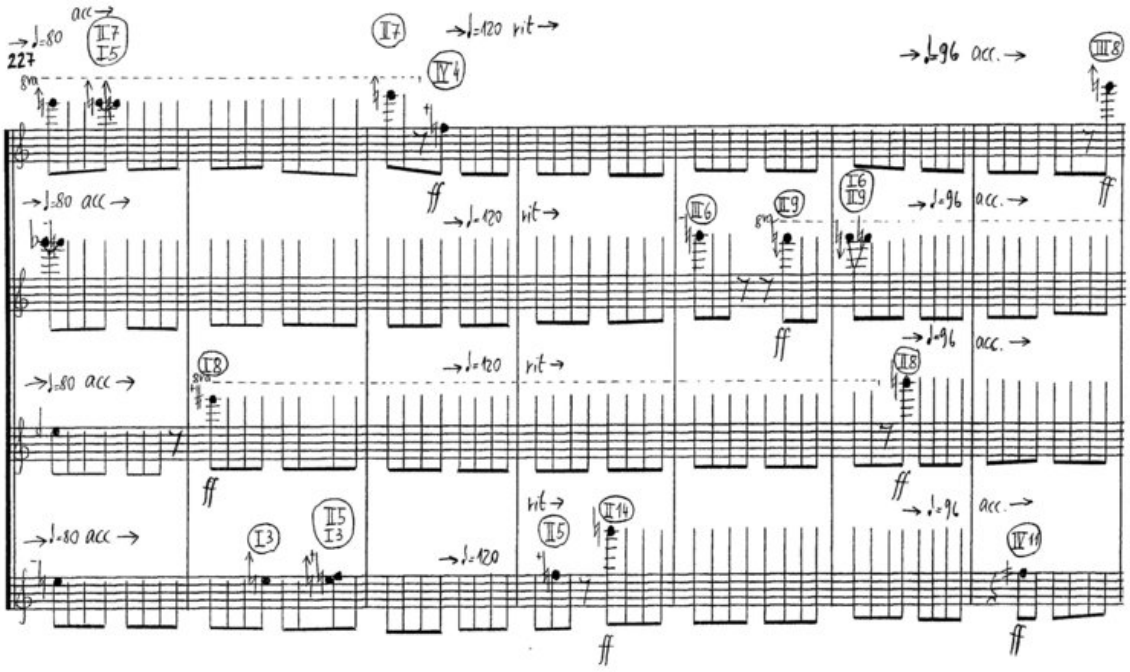

192
→♩=60 acc. (sempre)
poco rit
acc →
→♩=80 rit →
f

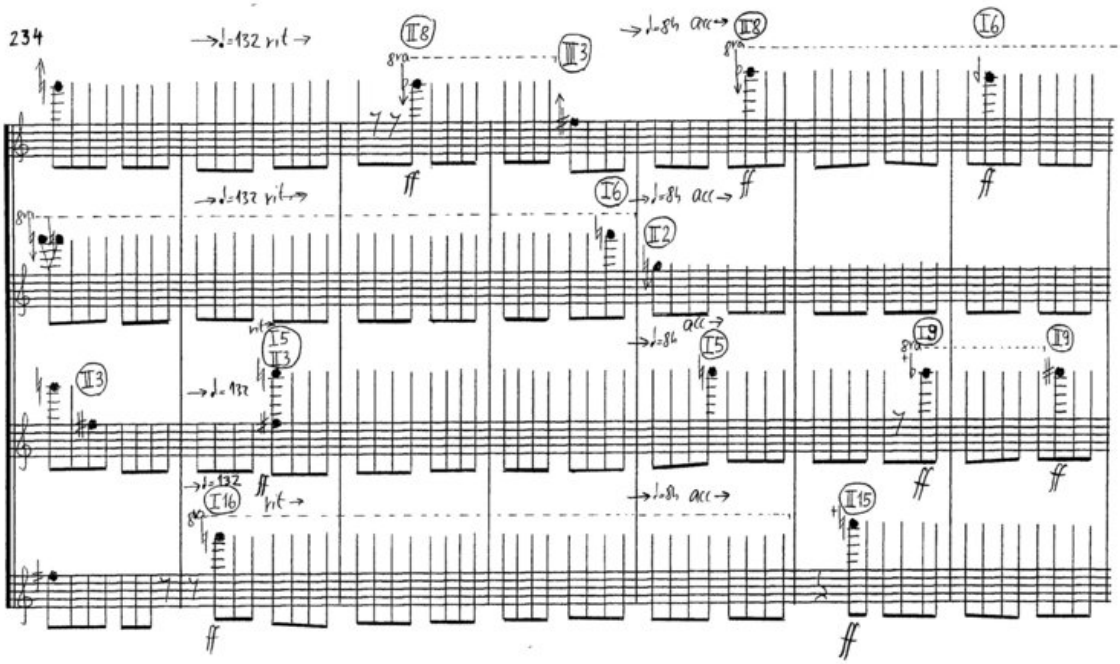

199
poco acc
rit →
poco acc.
rit →
poco acc.
rit →
poco acc.
rit →

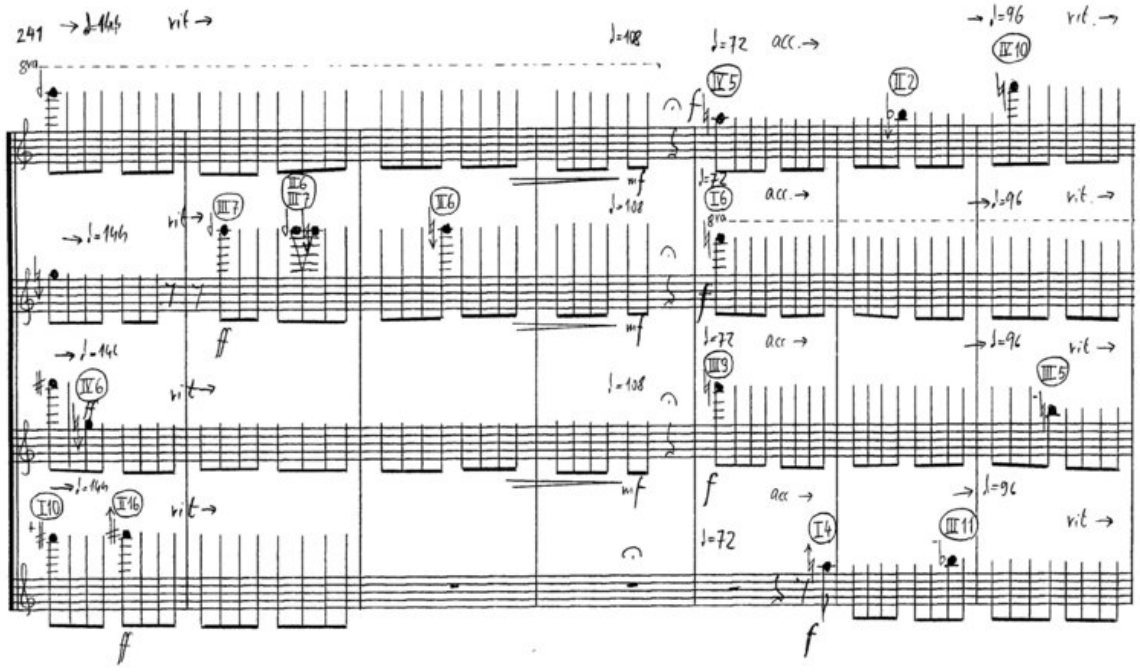

205
acc →
acc →
acc →
acc →
acc →
(colla parte)
1.V.
2.V.

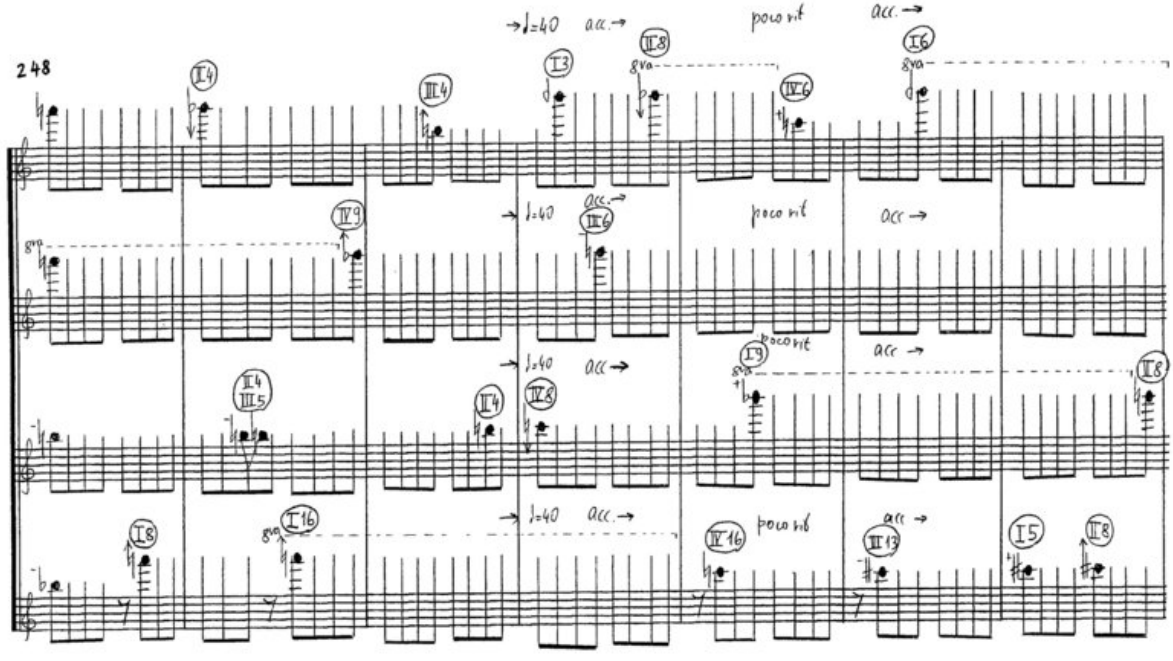

212
(cello parte)
poco rit
acc.
poco acc.
sim.

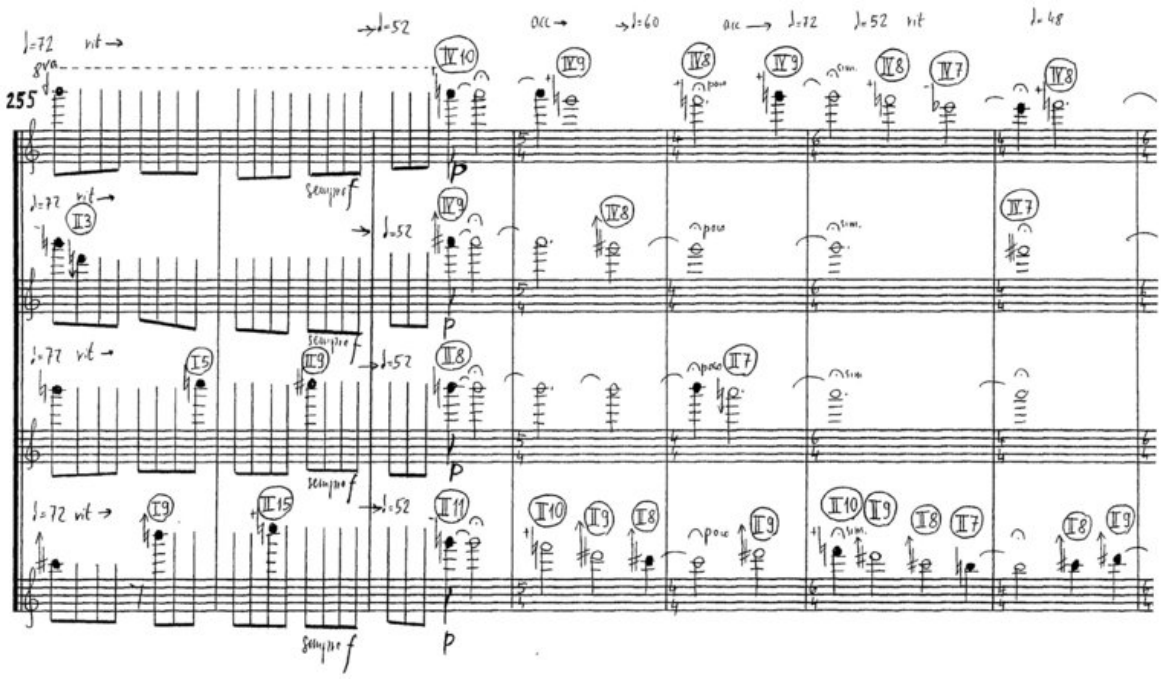

219
rit
poco rit
sim.

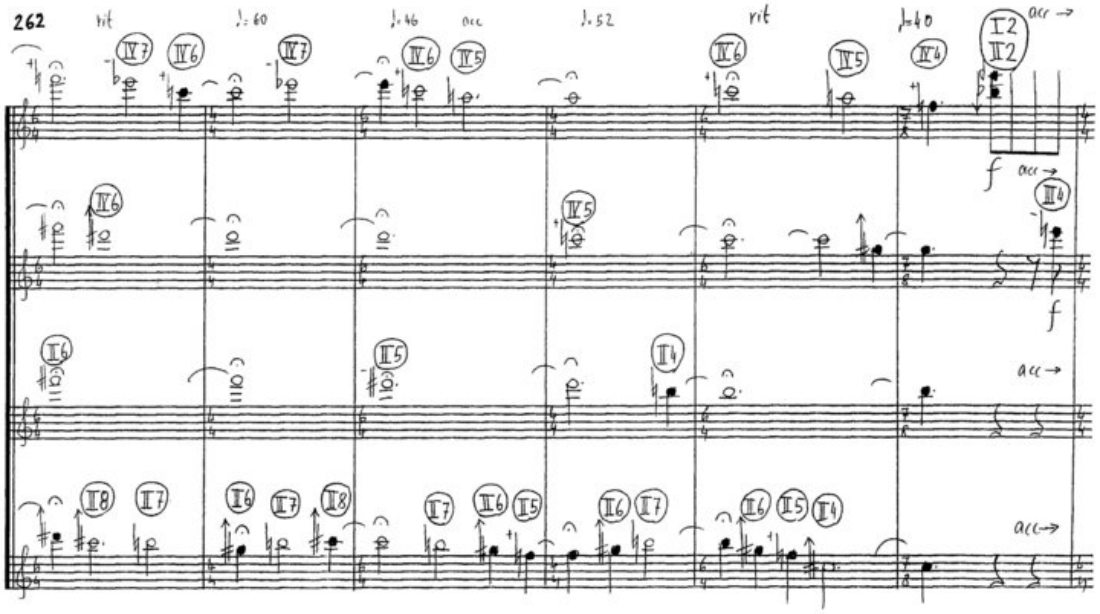

227
acc.
♩=80
♩=120 rit
♩=96 acc.
♩=80 acc
♩=120 rit
♩=96 acc.
♩=80 acc
♩=120 rit
♩=96 acc.
♩=80 acc
♩=120
rit
♩=96 acc.

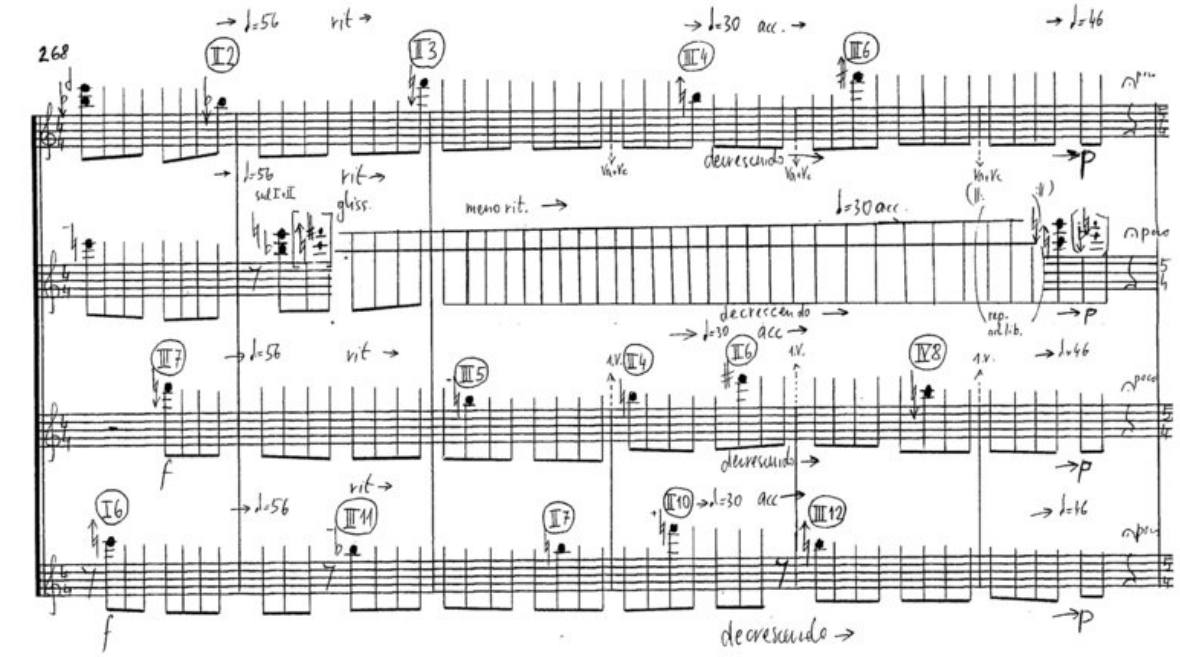

234
♩=132 rit
♩=84 acc
♩=132 rit
♩=84 acc
♩=132
♩=84 acc
♩=132
rit
♩=84 acc

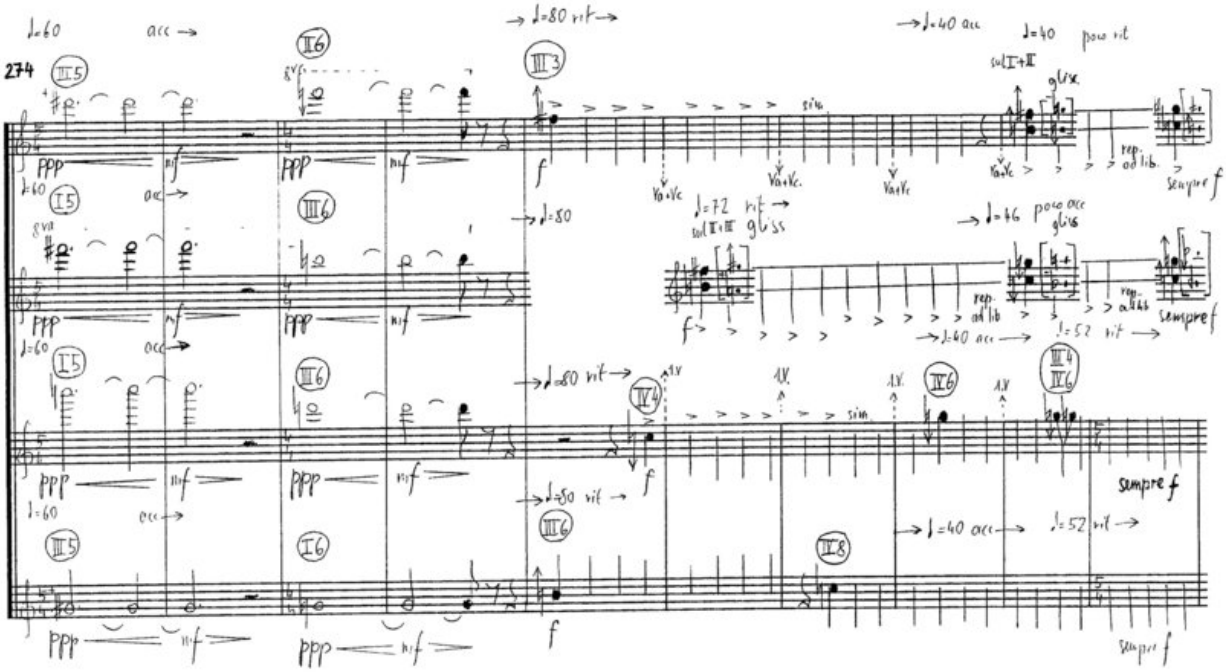

241
rit →
acc. →
rit. →
8va
mf
f
ff

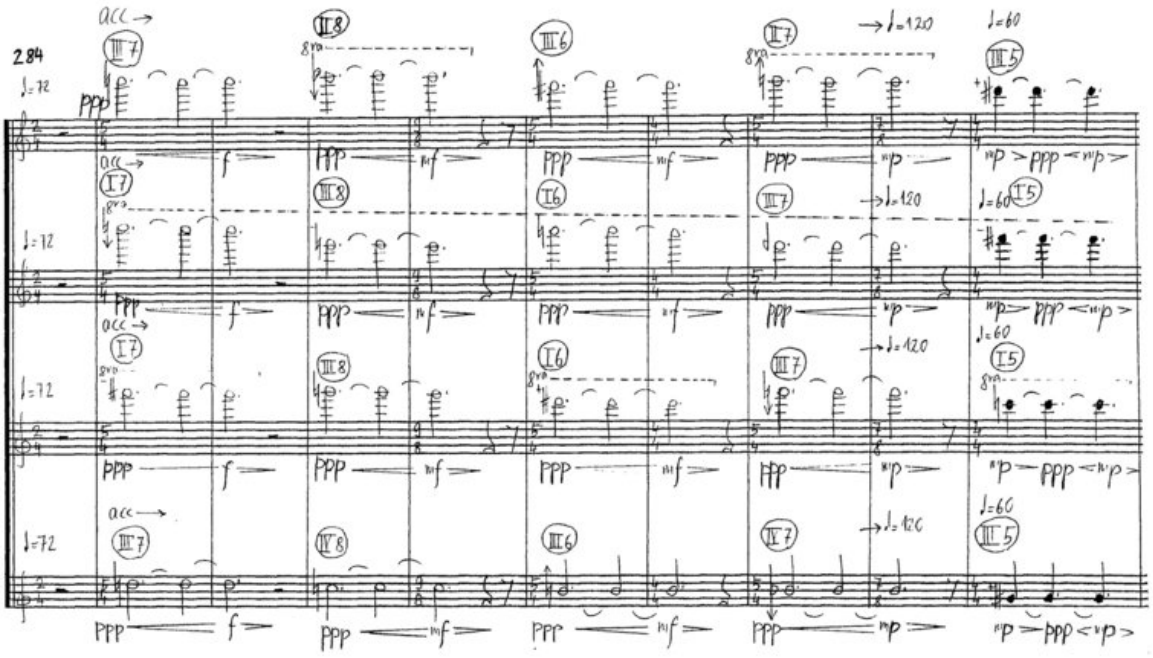

248
poco rit
acc. →
8va

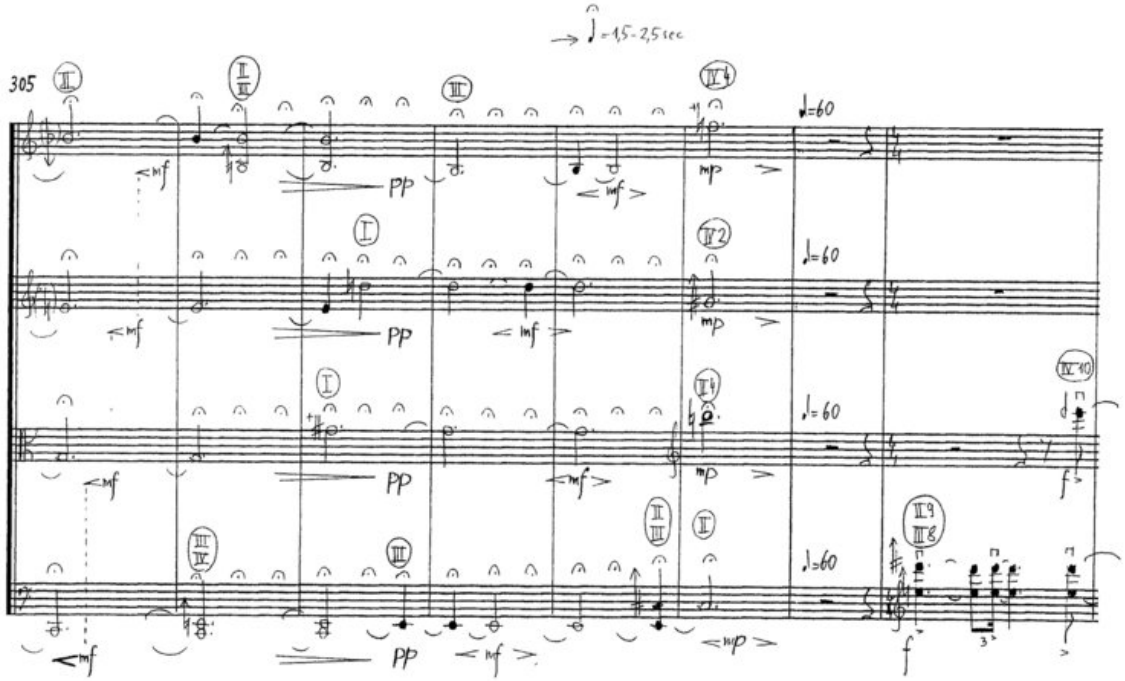

255
♩=72 rit →
→♩=52
acc →
→♩=60
acc →
♩=72
♩=52 rit
♩=48
8va
sempre f
p
poco
sim.

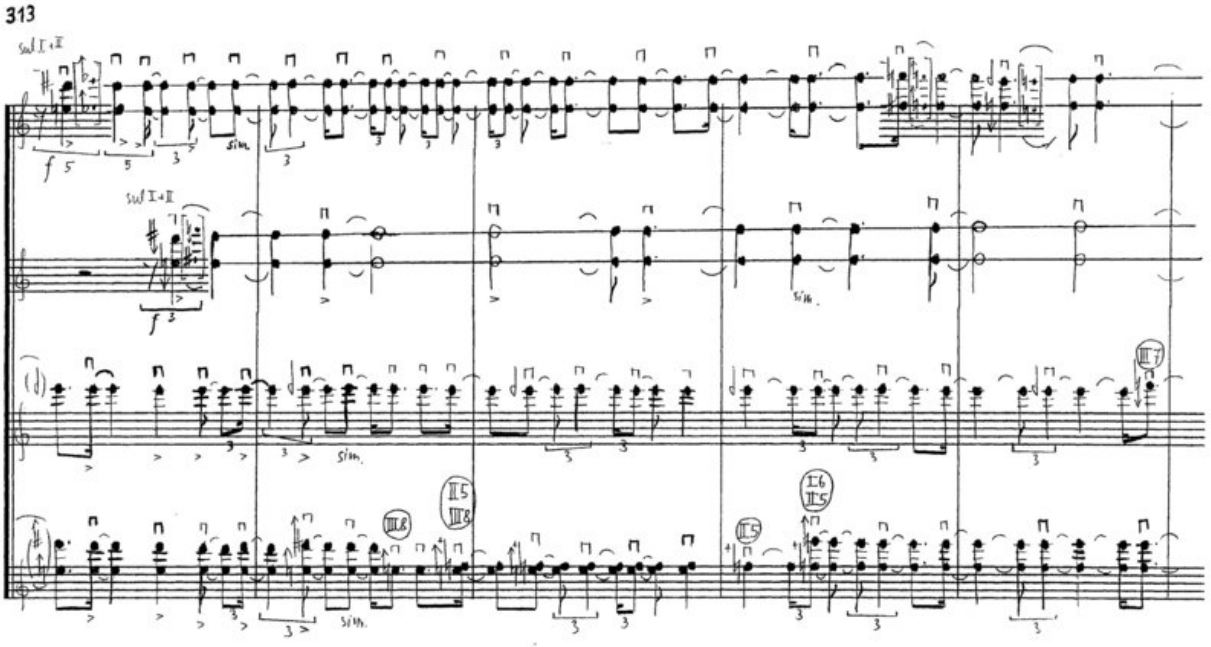

262
rit
♩=60
♩=46
acc
♩=52
rit
♩=40
acc →
f

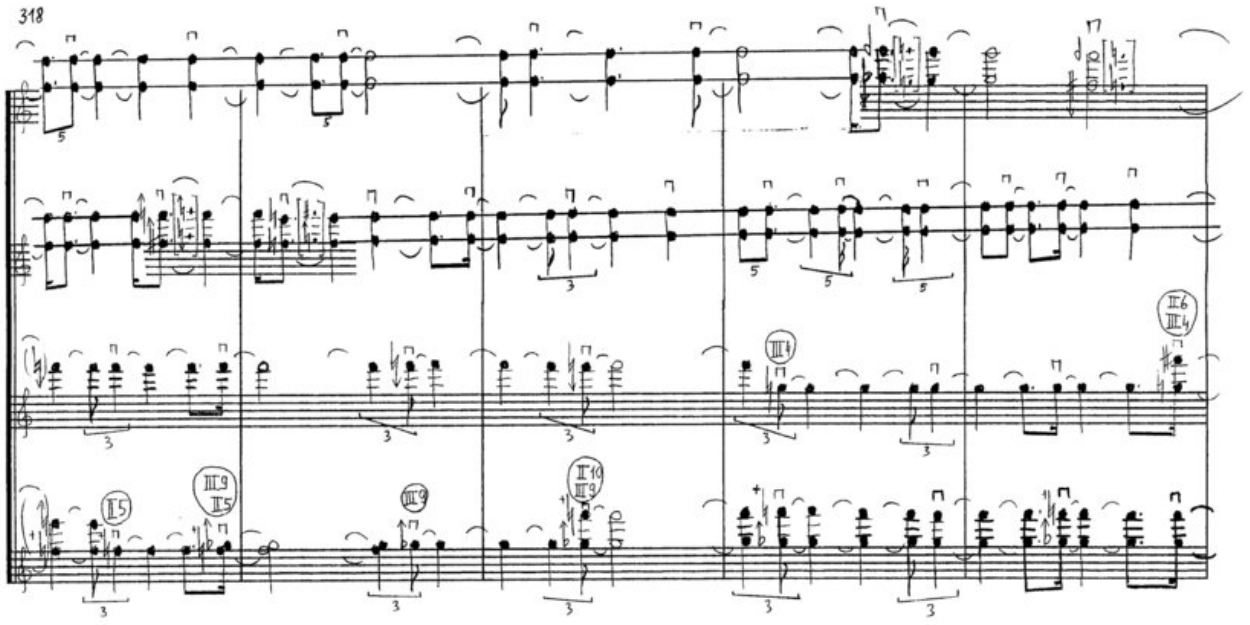

268
rit
acc.
decrescendo
meno rit.
gliss.
sul I+II
rep. ad lib.
poco
f
p

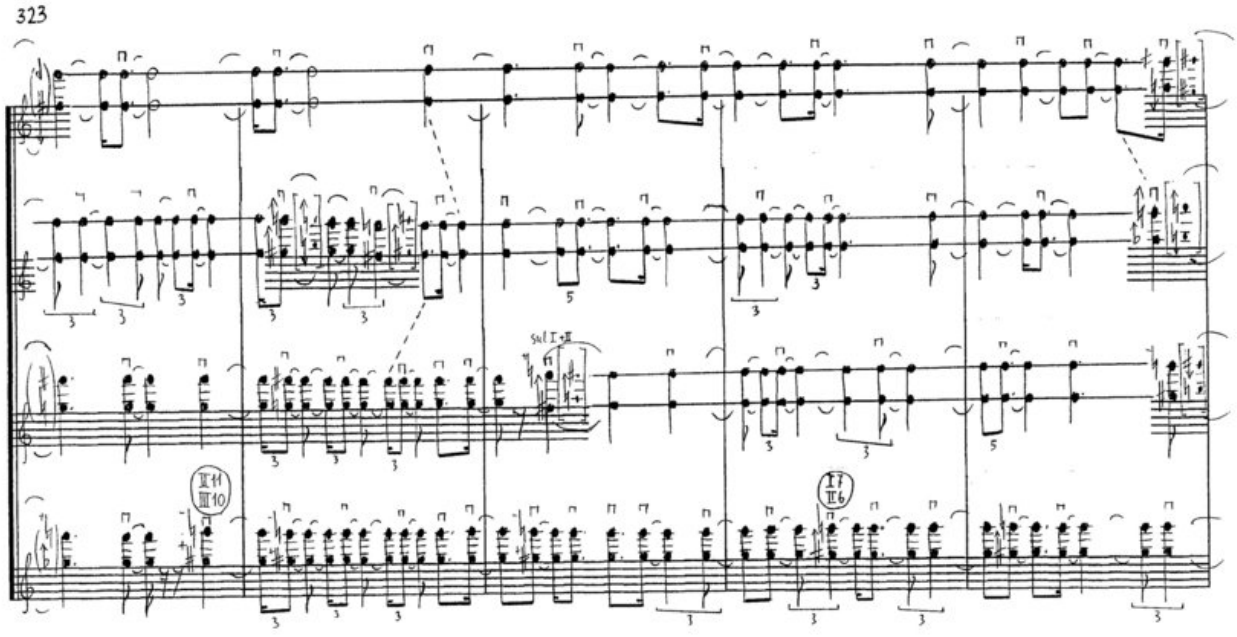

274
acc
rit
poco rit
gliss.
sul I+II
sempre f
poco acc
sul II+III
rep. ad lib.
sim.
ppp
mf
f

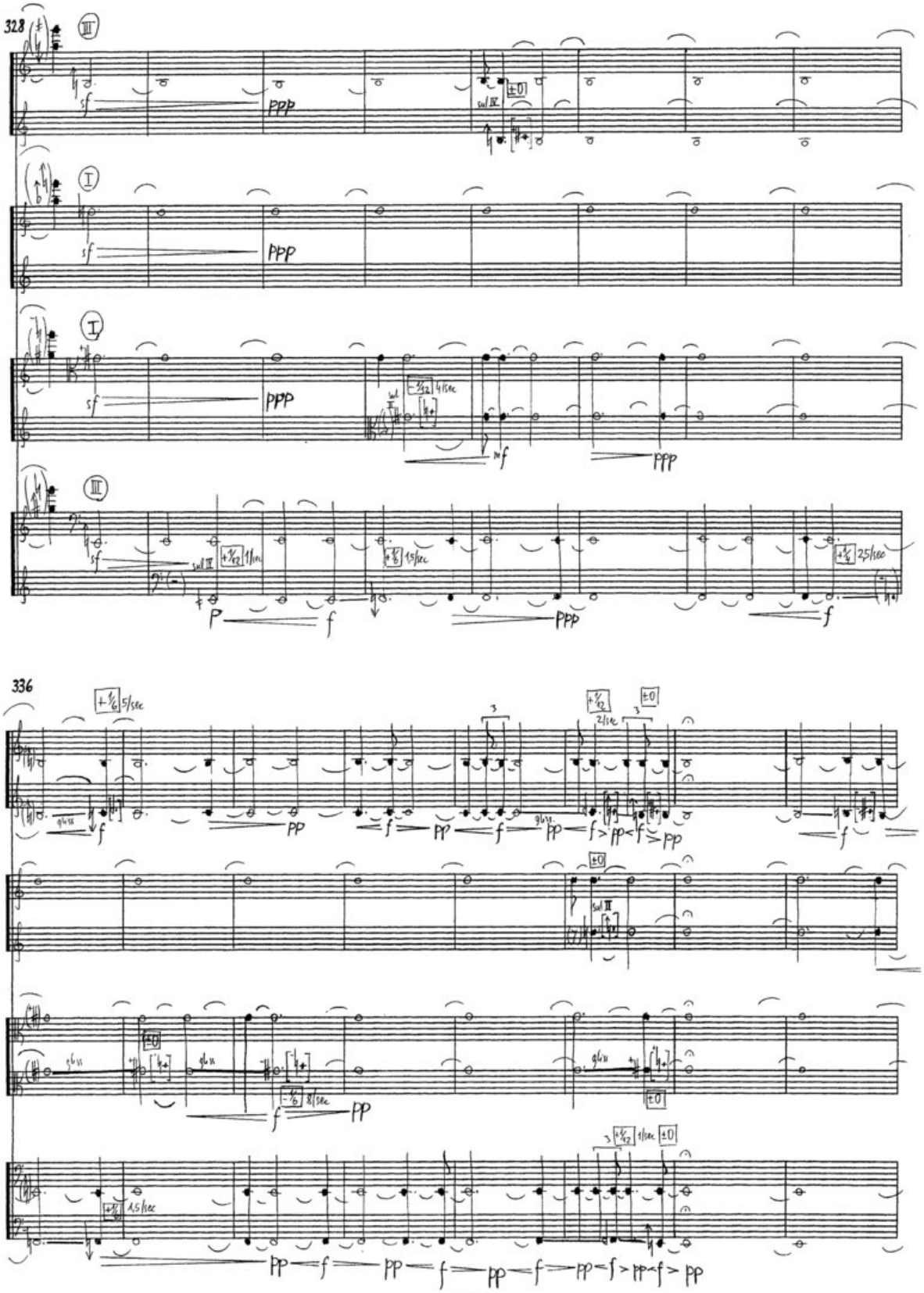

284
294

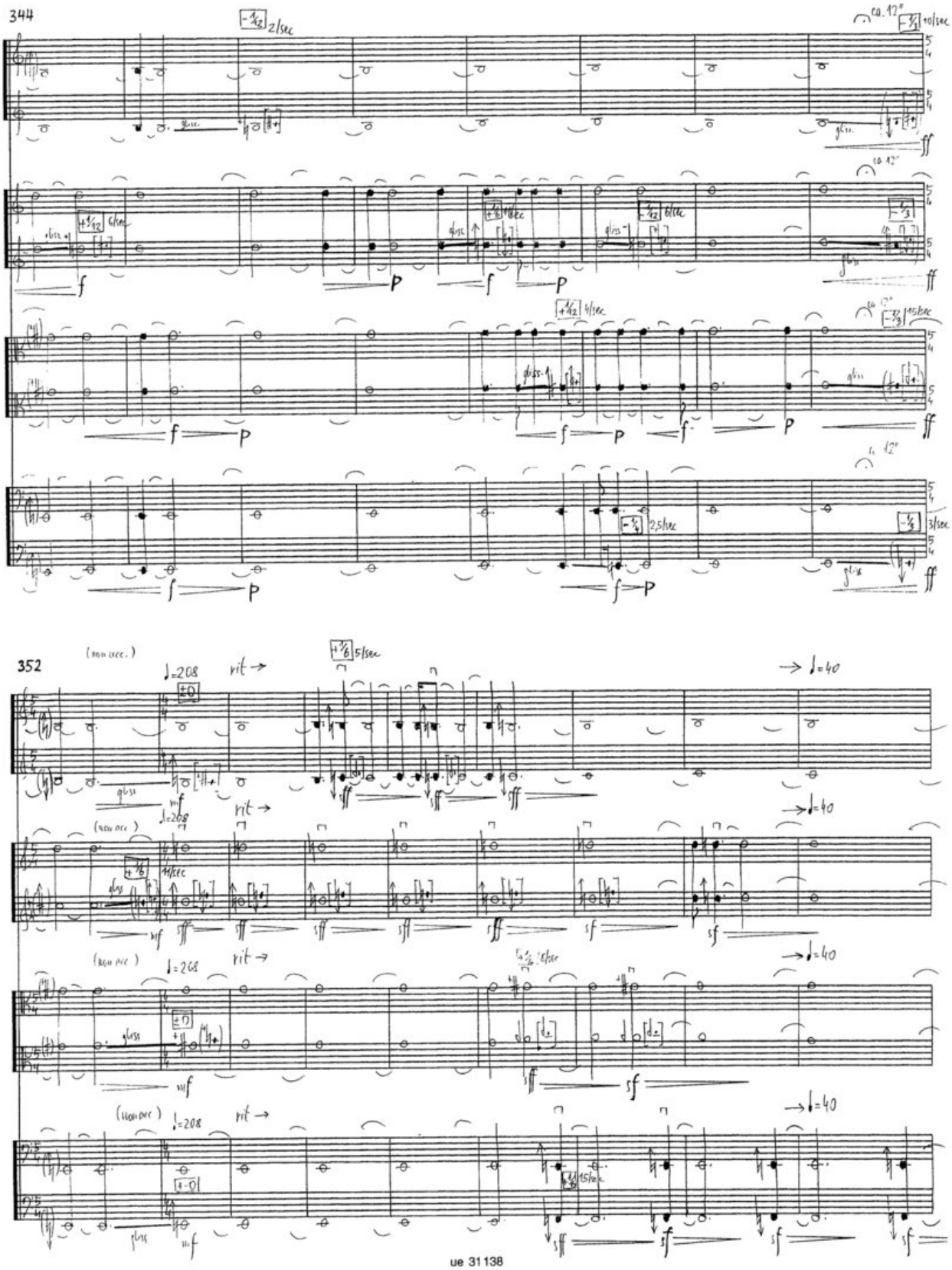

305
♩=1,5-2,5 sec
♩=60
pp
mf
mp

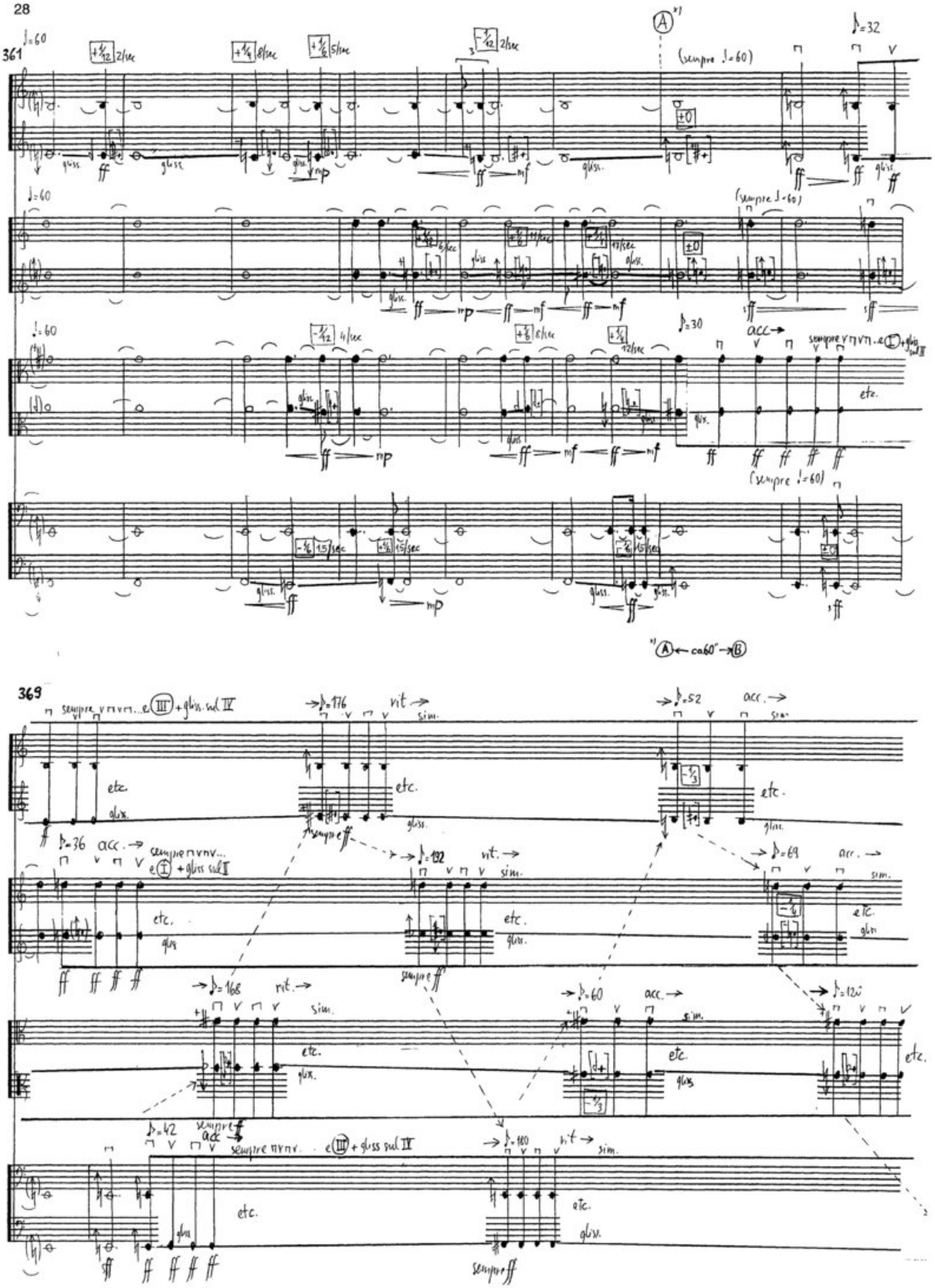

313
sul I+II
sim.

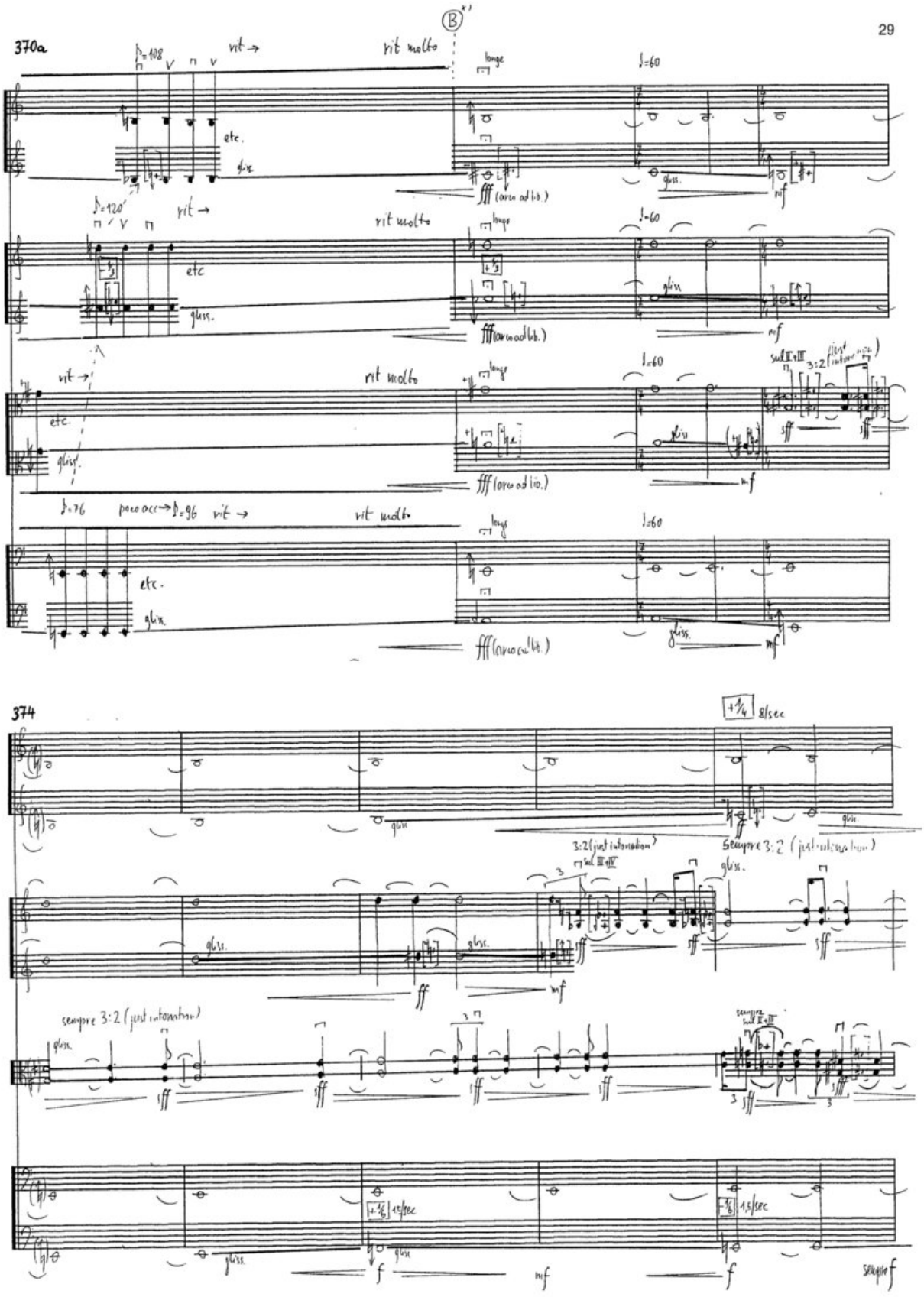

318

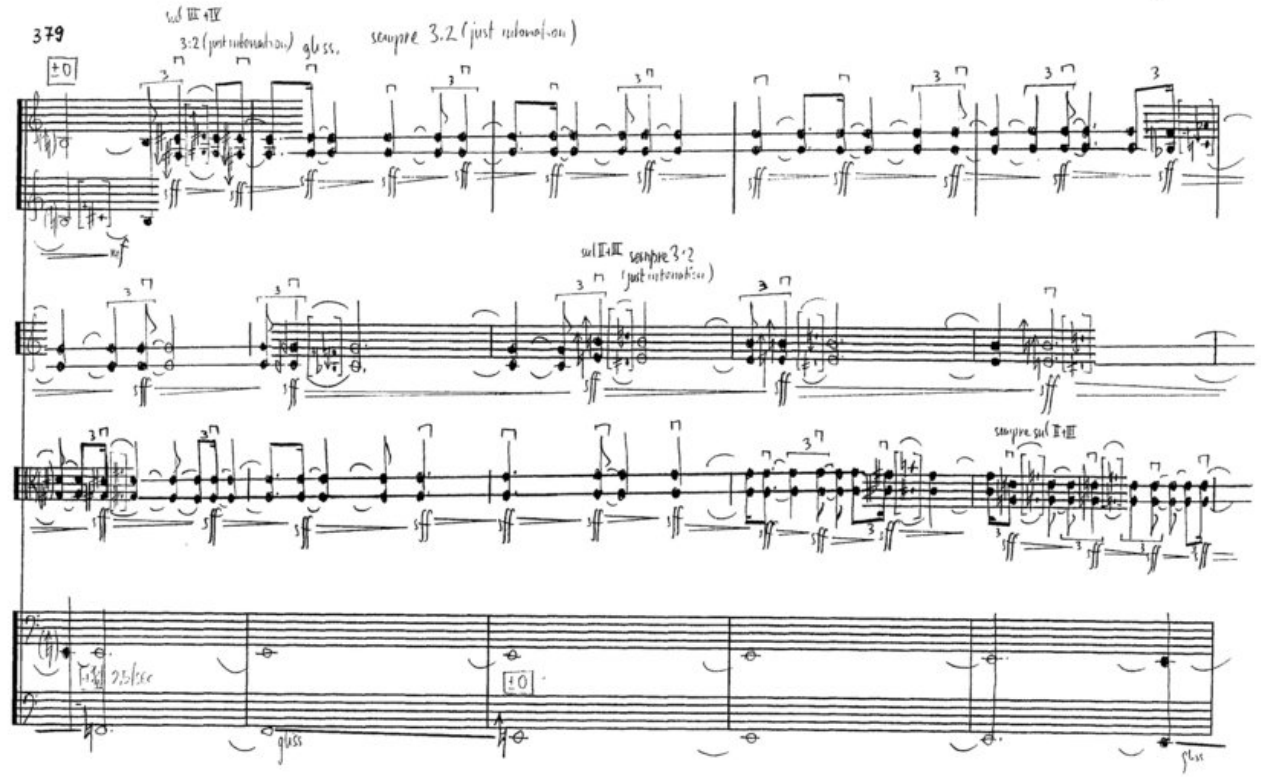

323
sul I+II

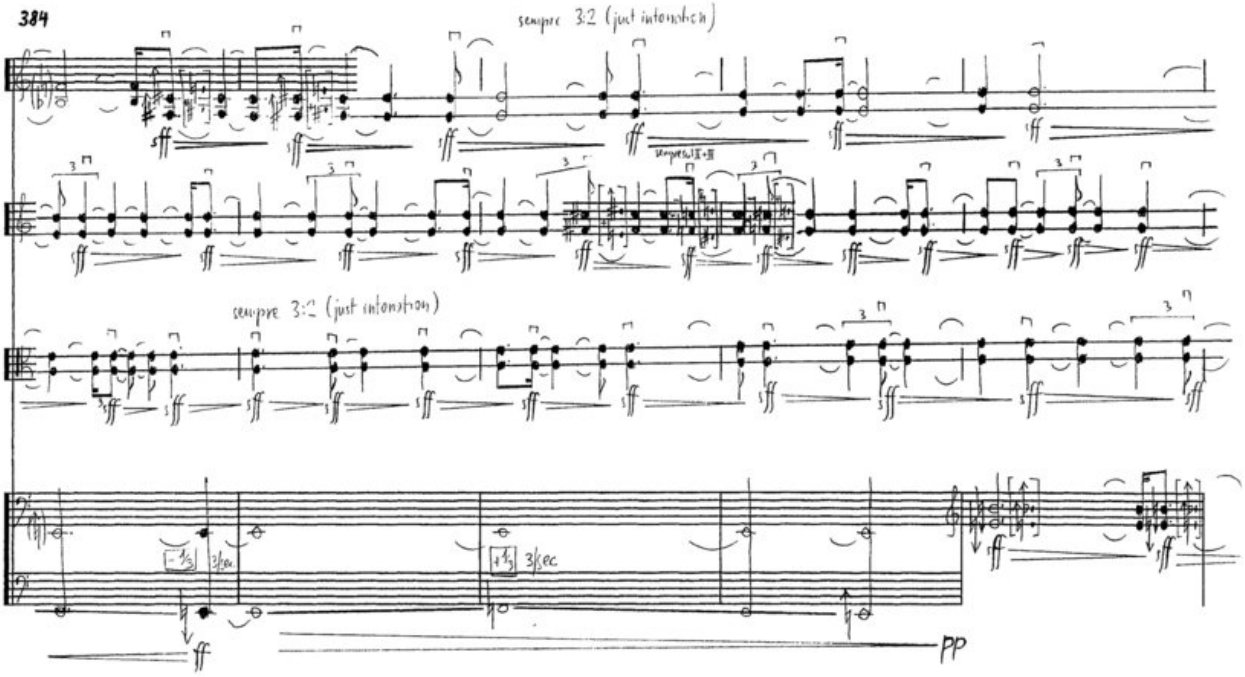

328
III
sf
ppp
sul IV
±0
I
sf
ppp
I
sf
ppp
sul II
-1/12 4/sec
mf
ppp
III
sf
sul III
+1/12 1/sec
+1/6 1,5/sec
+1/4 2,5/sec
p
f
ppp
f
336
+1/6 5/sec
+1/12 2/sec
±0
f
pp
f
pp
f
pp
f
pp
f
pp
f
±0
sul II
±0
-1/6 8/sec
f
pp
±0
+1/12 1/sec
±0
+1/6 1,5/sec
pp
f
pp
f
pp
f
pp
f
pp
f
pp

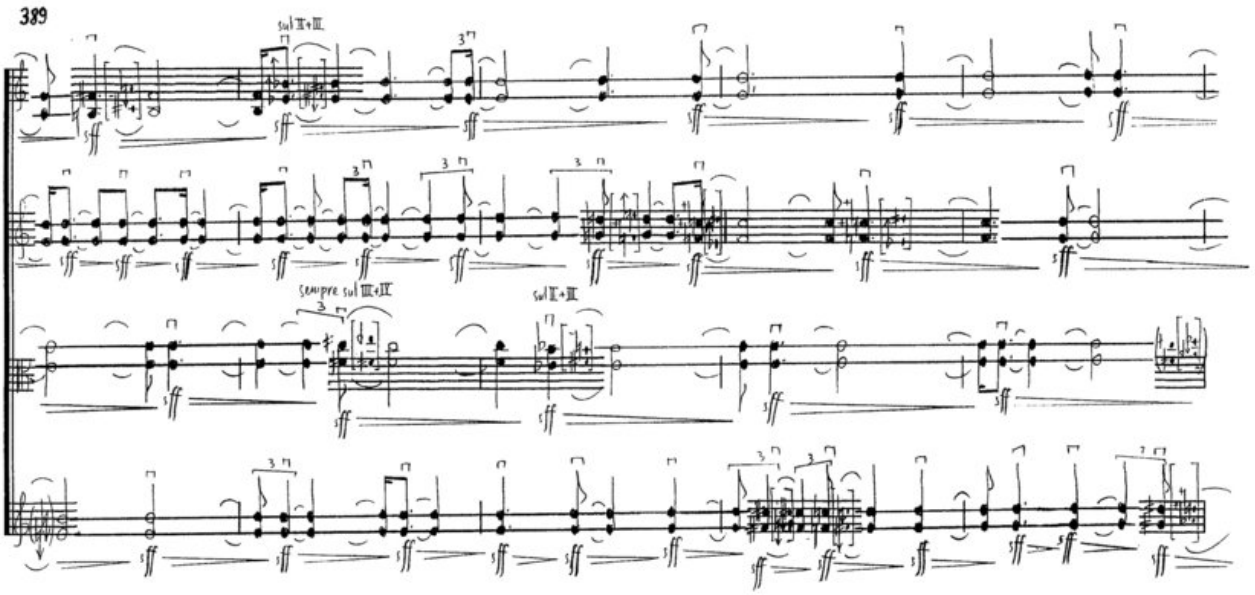

344
352
rit →
→ ♩=40
(non acc.)
gliss.
mf
sff
sf
f
p
ff

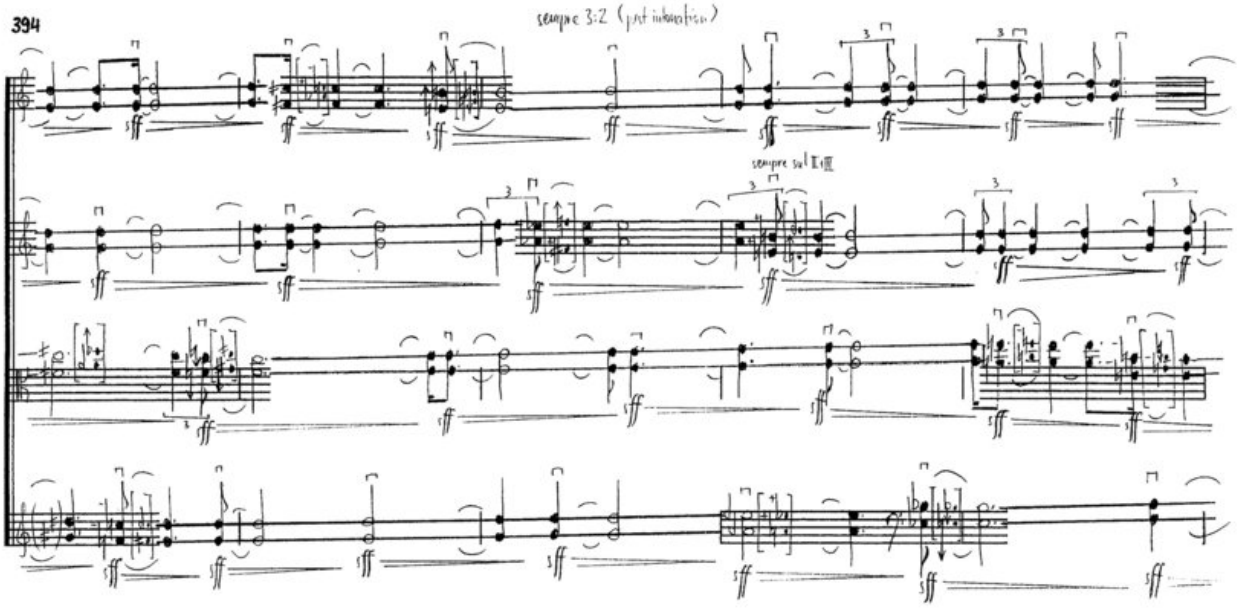

361
♩=60
(sempre ♩=60)
♪=32
♪=30
acc.
etc.
gliss.
369
sempre ff
rit.
sim.
acc.
etc.
gliss.

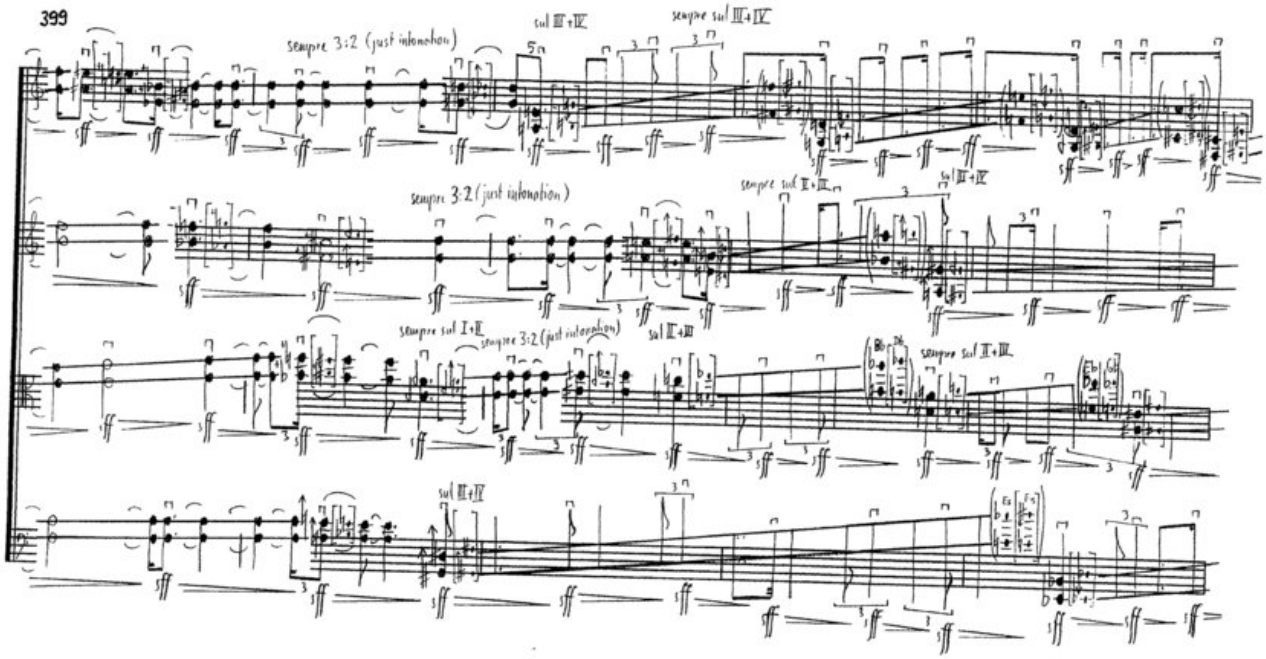

370a
rit →
rit molto
etc.
gliss.
fff (arco ad lib.)
mf
sul II+III
3:2 (just intonation)
sff
poco acc →
374
+1/4 8/sec
sempre 3:2 (just intonation)
sempre sul II+III
+1/6 1,5/sec
-1/6 1,5/sec
sempre f

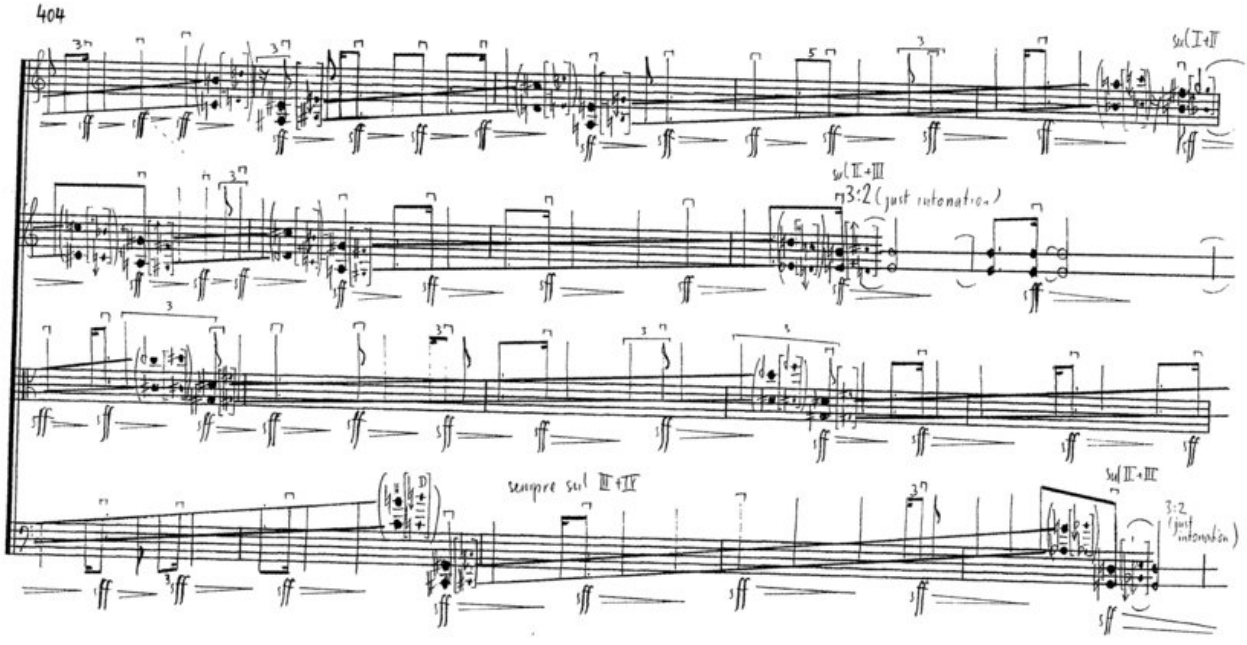

379
sul III+IV
3:2 (just intonation)
gliss.
sempre 3:2 (just intonation)
±0
sul II+III
sempre 3:2
(just intonation)
sempre sul II+III
gliss
±0
gliss

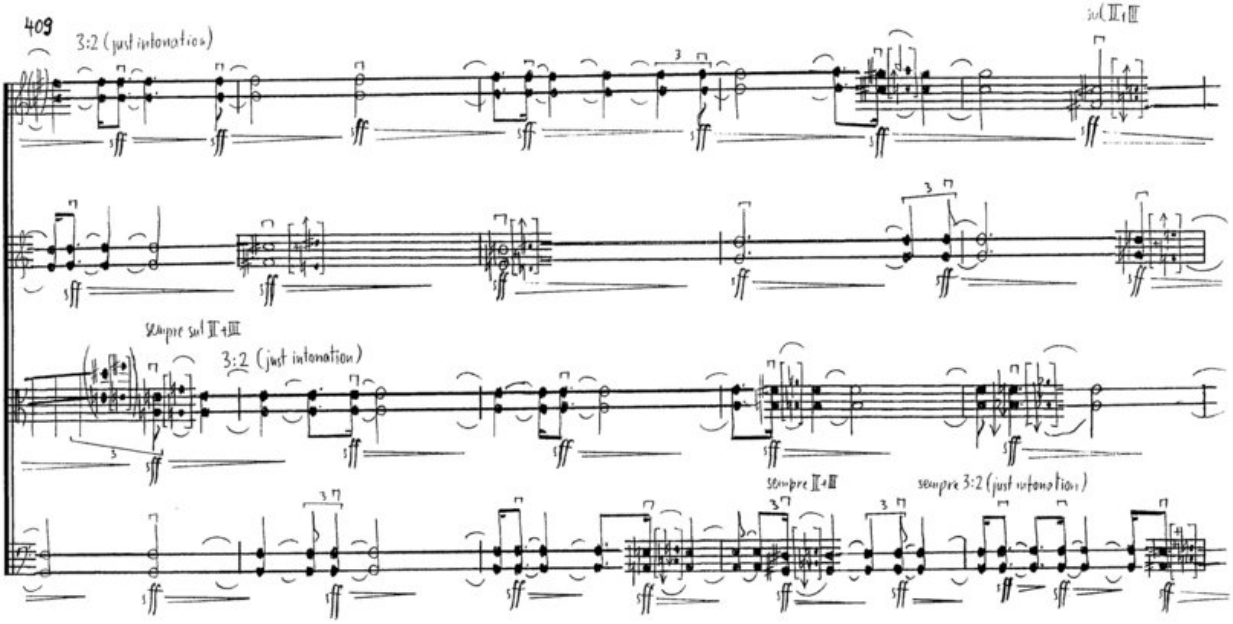

384
sempre 3:2 (just intonation)
sempre sul II+III
sempre 3:2 (just intonation)
3/sec
3/sec
pp

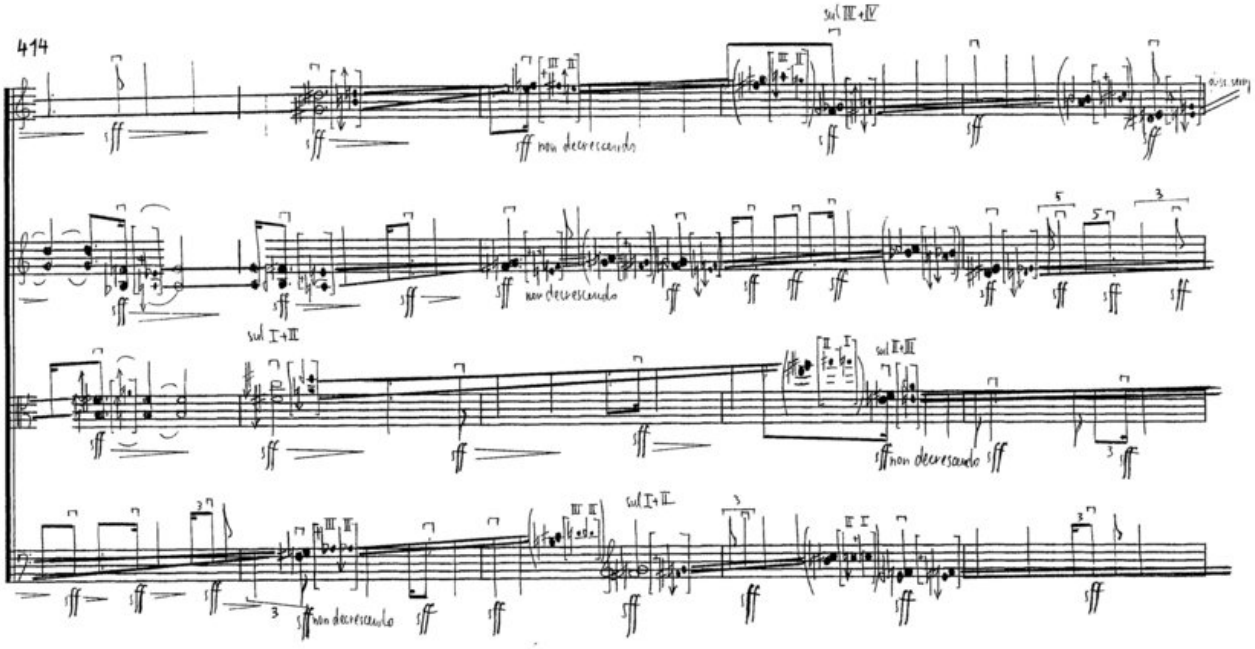

389
sul II+III
sempre sul III+II
sul II+III

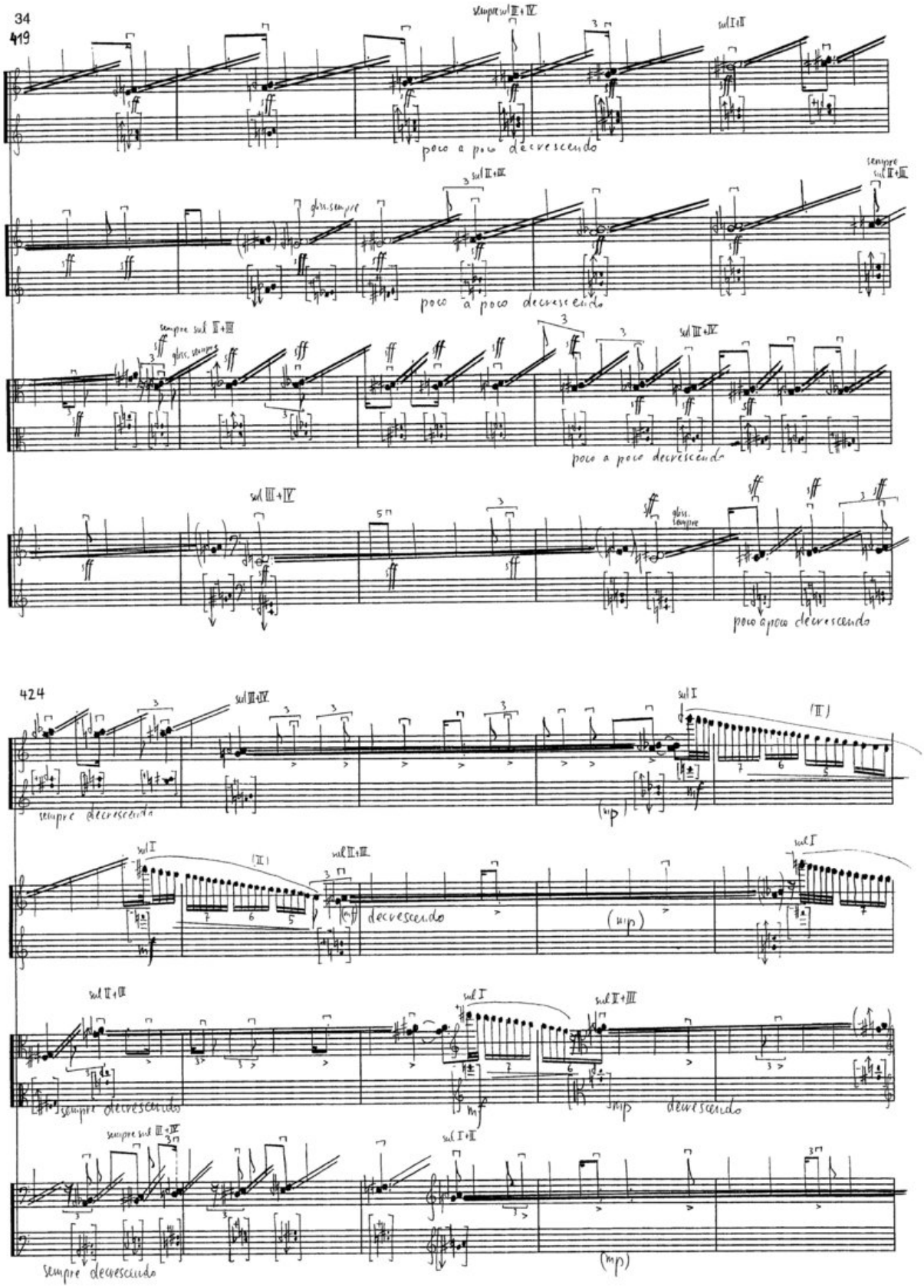

394
sempre 3:2 (just intonation)
sempre sul II+III

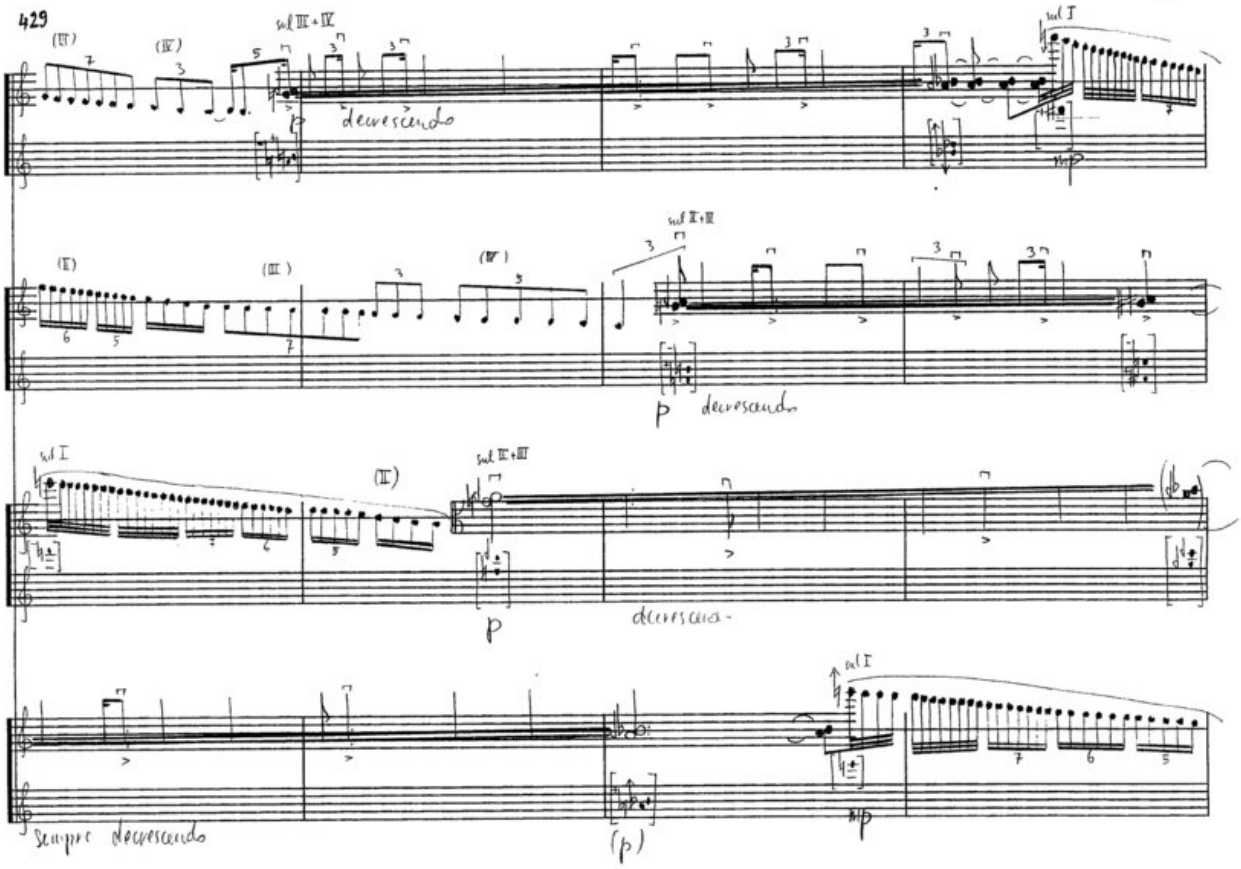

399
sempre 3:2 (just intonation)
sul III+IV
sempre sul III+IV
sempre 3:2 (just intonation)
sempre sul II+III
sempre sul I+II
sempre 3:2 (just intonation)
sul II+III
sempre sul II+III
sul III+IV

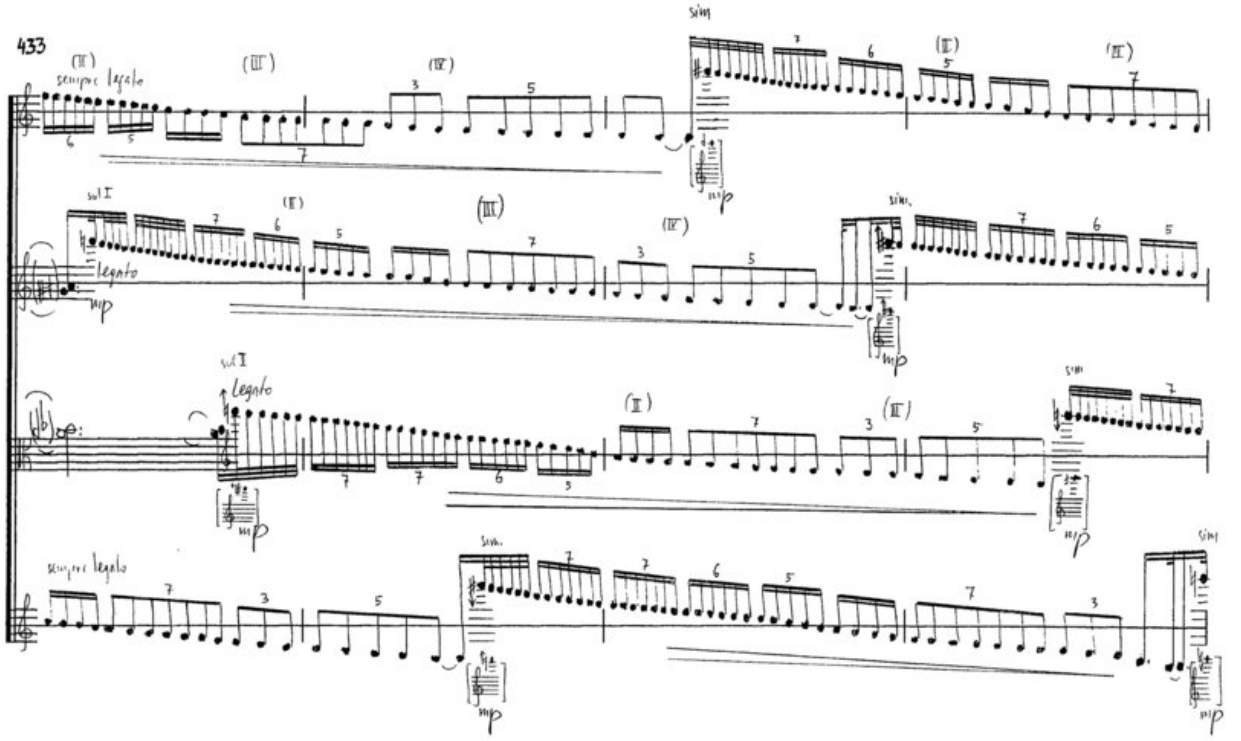

404
sul I+II
sul II+III
3:2 (just intonation)
sempre sul III+IV
sul II+III
3:2 (just intonation)

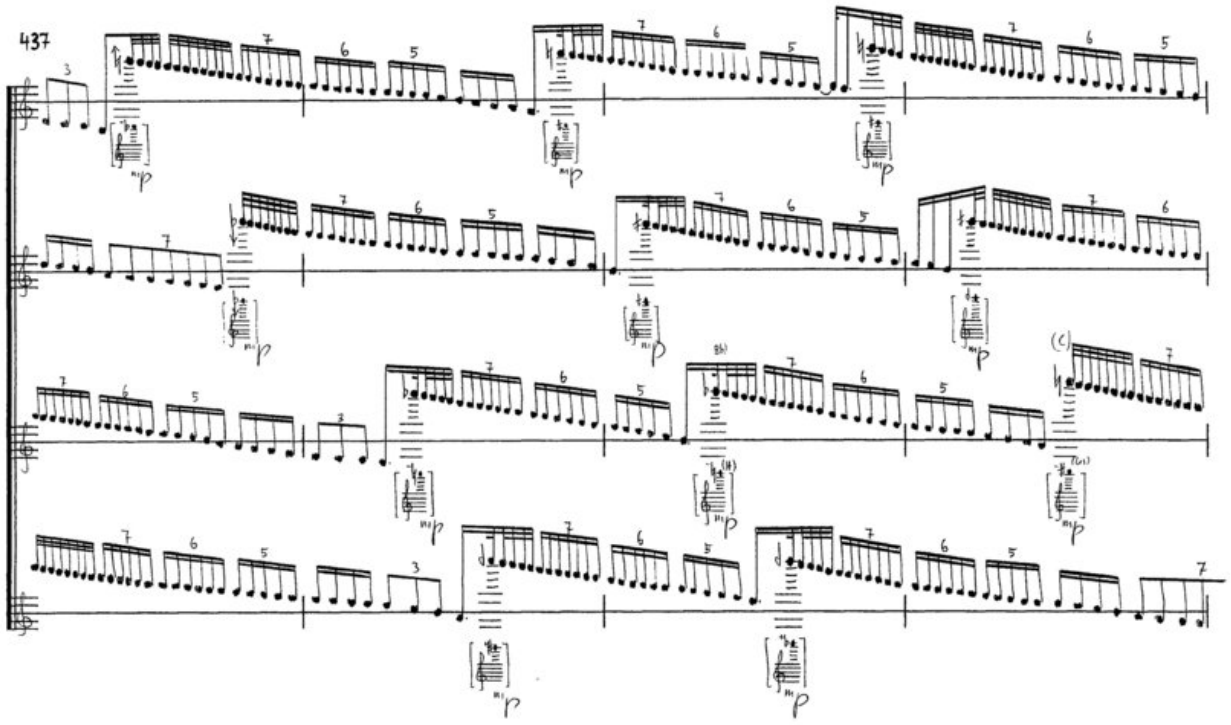

409
3:2 (just intonation)
sul II+III
sempre sul II+III
3:2 (just intonation)
sempre II+III
sempre 3:2 (just intonation)

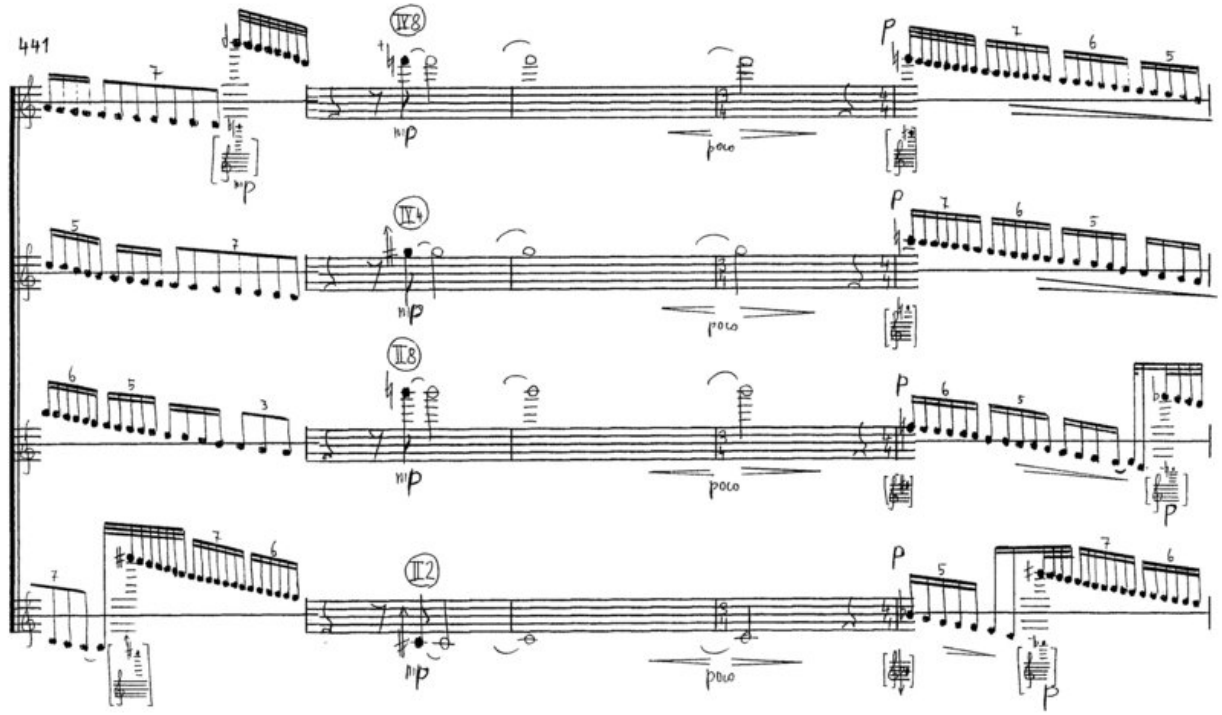

414
sul III+IV
non decrescendo
sul I+II
sul II+III
non decrescendo
sul I+II
non decrescendo

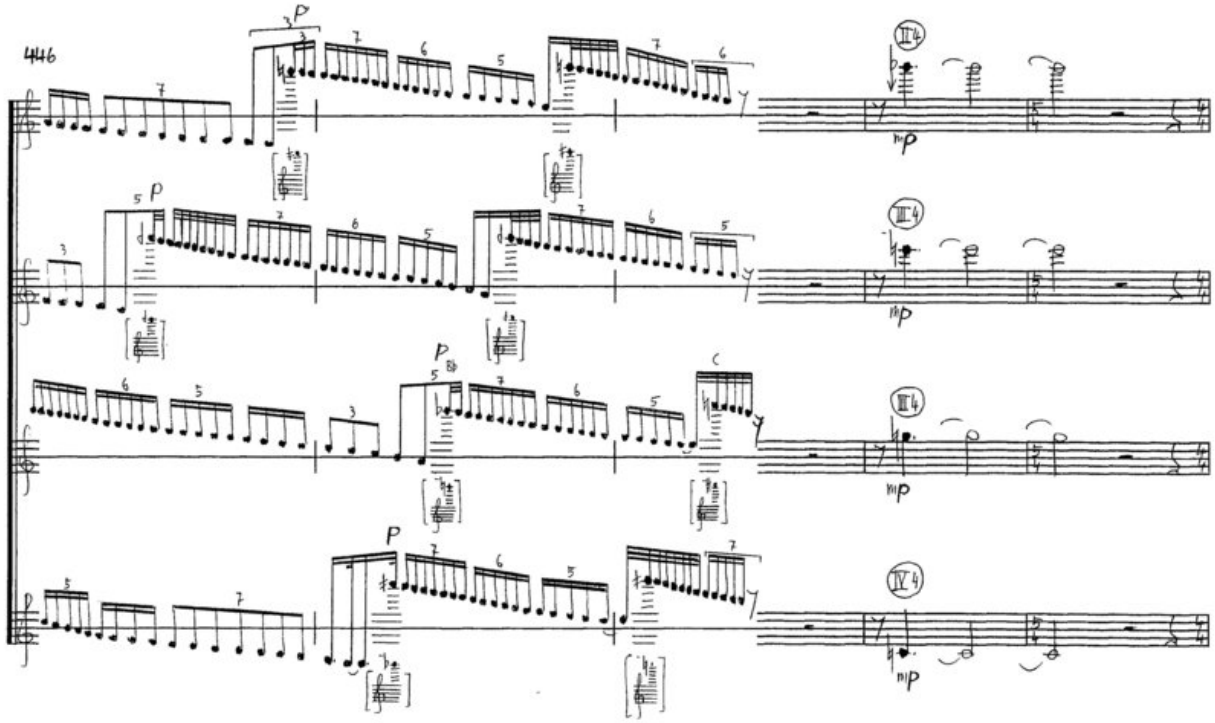

419
sempre sul III+IV
sul I+II
poco a poco decrescendo
sempre sul II+III
gliss. sempre
sul III+IV
poco a poco decrescendo
sempre sul II+III
gliss. sempre
sul III+IV
poco a poco decrescendo
sul III+IV
gliss. sempre
poco a poco decrescendo
424
sul III+IV
sempre decrescendo
sul I
(II)
(mp)
sul I
(II)
sul II+III
decrescendo
(mp)
sul I
sul II+III
sempre decrescendo
sul I
sul II+III
mp
decrescendo
sempre sul III+IV
sul I+II
sempre decrescendo
(mp)

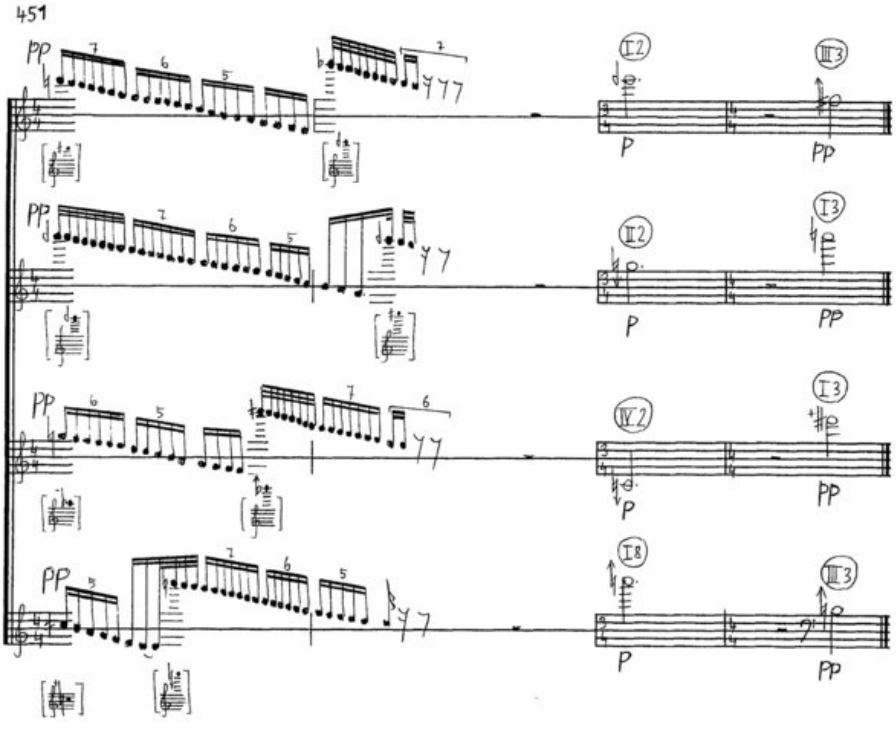

429
sul III + IV
decrescendo
sul I
sul II + III
p
decrescendo
sul I
sul III + III
p
decrescendo
sul I
Sempre decrescendo
(p)


433
sempre legato
sim
sul I
legato
sul I
Legato
sempre legato
sim.


437


441
poco





7.7.97
Siegfried Rabe

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