

KNUT OLAF SUNDE

VERTIGO ROOM

String quartet and loudspeakers

2011

41 min

www.kosunde.no

Commissioned by Cikada quartet, premiered 12. September 2011

Supported by Det norske komponistfond


Thanks to Anna Godøy and Håkon Jessen for lending out testing instruments, and to Julian Skar for programming.

Tuning:

Chamber pitch 442 Hz = 6900 midicents.

The score is notated in *natura*.

Violin 1 and 2:



7714
6900
6198
5384

The image shows a treble clef with a sharp sign on the F line. Four notes are indicated by dots on the staff: G4 (7714), E4 (6900), D4 (6198), and C4 (5384).

Viola:



6971
6086
5384
4500

The image shows an alto clef with a flat sign on the C line. Four notes are indicated by dots on the staff: G4 (6971), E4 (6086), D4 (5384), and C4 (4500).

Cello:



5700
4998
4296
3412

The image shows a bass clef with a flat sign on the C line. Four notes are indicated by dots on the staff: G3 (5700), E3 (4998), D3 (4296), and C3 (3412).

VERTIGO ROOM is performed in a hall with flat floor suitable for flexible seating.

The musicians are positioned at a small podium in the centre of the hall, facing each other.

All four instruments are amplified so that the quietest sounds project sufficiently and the loudest dynamics have an oppressive quality.

At least two microphones each should be used, one of which is placed suitably to pick up the weak and little sonorous sounds up the fingerboard.

Eight loudspeakers - each with a designated channel - are placed around the walls, if possible about 50 cm higher as the sitting audience's ears.

Four of the speakers are large and facing inwards - four speakers might be smaller and facing outwards - or all eight equal and inwards-facing, depending on the acoustics of the hall.

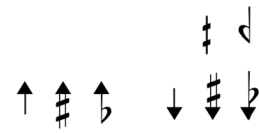
At the beginning the musicians are sitting on their seats. The instruments are fine-tuned backstage and is not tuned again when on stage. Then the audience enters.

A white warmly glowing light enlightens the musicians at the small podium from above, and the hall light goes out.

The sound controller must read the score to trig preprogrammed amplification as well as control the overall amplification.

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1/8-tone notation is widely used. Enharmonic spellings are omitted.



1/4-tone high and low respectively

1/8-tones high and low respectively



Node indication, in conjunction with natural harmonics and bottleneck placement



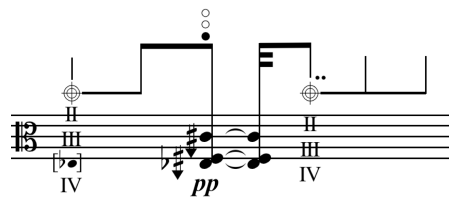
Left hand (LH) pizzicato



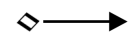
Muting the strings



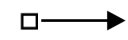
Pitches in brackets show the appropriate stop which is not to be heard as a pitch, but serves to prepare another effect. Preferably use fingernail.



Audible release of the indicated and previously muted strings in the given rhythm



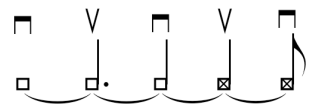
E-bow; lean against neighbouring string to keep it stable so that the string starts vibrating. Remember to turn the e-bow on.



Bow beyond nut

- or -

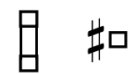
Bow at tailpiece



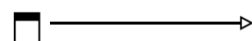
Bow behind bridge



Bow between left (stopping) hand and nut



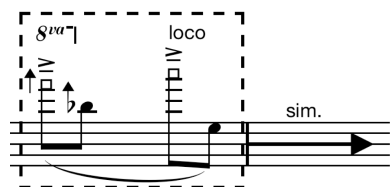
Bottleneck to stop (i.e. harmonic stops) several strings or one string respectively. Right hand (RH) use or one in each hand.



One bow-stroke arrow



Gradual change arrow



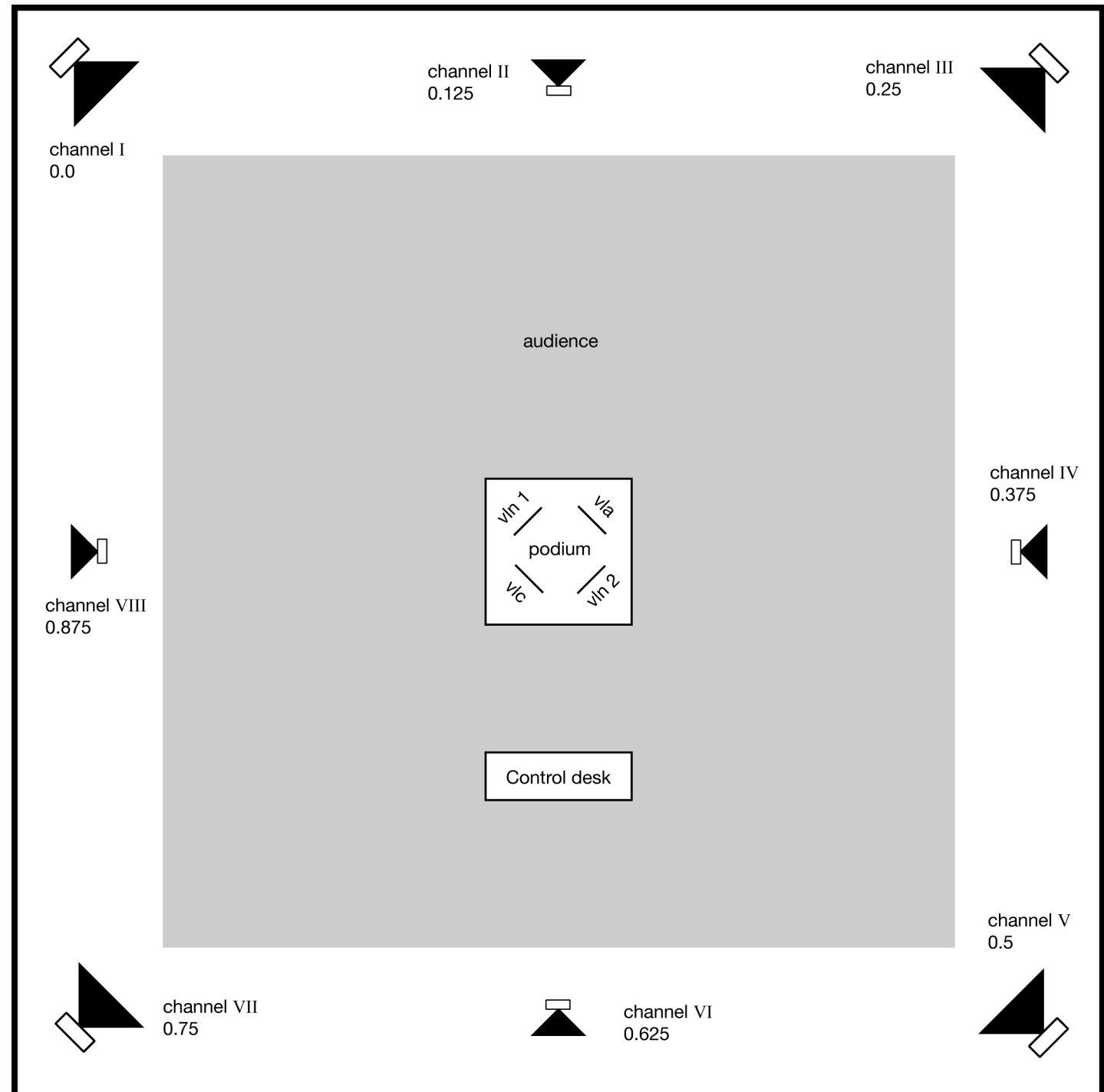
Repeated or prolonged action dotted frame and arrow

Performance material:

6 bottle-necks made of glass; two each for violin 1 and 2, one each for viola and cello
2 E-bows; for viola and cello
Sordins
Practise sordins

Parts are available.

Max/msp-patch (computer file) for preprogrammed sound treatment is available,
programmed by Julian Skar.



VERTIGO ROOM

KNUT OLAF SUNDE
2011

♩ = 60 *Distant, cool*

Ver. 1.0 25. April 2012

arco

CON SORD

SP molto, flautando

Violin I

II
III
(II gliss.)
SP
II
ppp
f

Violin II

CON SORD
BOTTLENECK
RH only
p
f
arco

Viola

BOTTLENECK
CON SORD
○ (depress silently before beginning)
release bottleneck with sound
arco
p
f

Cello

E-BOW
CON SORD touch string lightly to ensure that
it starts vibrating with e-bow
tilt carefully away
put e-bow away
arco
p
f

Amplification

Balanced amplification

12

ORD

Vln I

Vln II

Vla

Vlc

mp

ppp

mf

p

ppp

mf

pppp

ppp

mf

IV

II depress III to keep it out of the way

27

1

Vln I

Vln II

Vla

Vlc

mp

III

II

III

IV

ppp

f

ppp

mf

II

ppp

p

mp

p

pppp

42

Vln I

Vln II

Vla

Vlc

f *mf* *mp* *f* *mp*

II III IV I II III IV

57

Vln I

Vln II

Vla

Vlc

ff

III IV

73

2

Vln I

Vln II

Vla

Vlc

IV^o

pp

fff

IV^o

ppp

ff

fff

ff

I^o

f

87

Vln I

Vln II

Vla

Vlc

II^o

ff

fff

ffff

III^o

ff

fff

ffff

I^o

fff

ffff

ST molto I

pppp

II^o

3 ♩ = 72 *Intenso*

102

Vln I

Vln II

Vla

Vlc

f

p *mp* *f*

pp *mp* *f*

p *mp* *f*

III II I IV

glissando sempre

f poco a poco dim. sempre until bar 145

glissando sempre

f poco a poco dim. sempre until bar 145

glissando sempre

f poco a poco dim. sempre until bar 145

glissando sempre

f poco a poco dim. sempre until bar 145

115

Vln I

Vln II

Vla

Vlc

122

Vln I

Vln II

Vla

Vlc

(mf)

129

Vln I

Vln II

Vla

Vlc

(mp)

136

Vln I

Vln II

Vla

Vlc



142

Vln I

Vln II

Vla

Vlc

p

ppp

(con sord)

4

SP molto
punta
trem. as fast as possible

SP molto

(con sord)

p > ppp

mp

SP molto
punta
trem. as fast as possible

(con sord)

pp

ppp

BOW UNDER STRINGS

(con sord)

SP

sfz

ppp

BOW UNDER STRINGS

SP

I

IV

VI

sfffz

6:4

6:4

6:4

6:4

SP

I

IV

VI

sfffz

ppp

SP

I

IV

VI

sfffz

ppp

arco flautando

p

saltando

3:2

SPm
SP
CRD
ST
STm

I
II
III
IV

I
II

I
II
III
IV

I
II
III
IV

I
II
III
IV

I
II
III
IV

I
II
III
IV

I
II
III
IV

I
II
III
IV

I
II
III
IV

I
II
III
IV

I
II
III
IV

Vln I

Vln II

Vla

Vlc

Vln I

SPm
SP
ORD
ST
STm

Vln II

SPm
SP
ORD
ST
STm

SP
punta
8va

Vla

SP

Vlc

SP

Vln I

SPm
SP
ORD
ST
STm

5/4 7/4 4/4 4/4 3/4

(8)

3:2 5:4 5:4 3:2 5:4 5:4

Vln II

SPm
SP
ORD
ST
STm

5/4 7/4 4/4 4/4 3/4

(8)

3:2 5:4 5:4 3:2 5:4 5:4

sffz *pp*

Vla

SPm
SP
ORD
ST
STm

5/4 7/4 4/4 4/4 3/4

(f³)

sffz p "mp" *sffz* *ppp*

Vlc

SPm
SP
ORD
ST
STm

5/4 7/4 4/4 4/4 3/4

7:8

ppp *sffz* *ppp* *sffz* 5:4 7:8 *ppp*

The musical score consists of four staves: Violin I (Vln I), Violin II (Vln II), Viola (Vla), and Violoncello (Vlc). The time signature is 4/4. The score includes various performance markings and technical instructions:

- Vln I:** Features a melodic line with notes marked with 'V' and 'SP'. It includes dynamic markings *ppp* and *pp < p*. A section is marked 'loco'.
- Vln II:** Mirrors the Vln I line with similar dynamics and markings.
- Vla:** Plays a complex rhythmic pattern with notes marked 'I' and 'IV'. Dynamics range from *sffz* to *ppp*.
- Vlc:** Plays a complex rhythmic pattern with notes marked 'I' and 'IV'. Dynamics range from *sffz* to *ppp*.

Technical markings include '5:4' and '3:2' ratios, and 'SP' (Sul Ponticello) instructions. The score concludes with a double bar line and a 5/4 time signature change.

166

Vln I

SP molto flautando

PPP

p

PPP

SP flautando

PPP

p

Vln II

SP molto

8va

(slow upward gliss)

p

pppp

ST

V

pp < mp

ppp

SP flautando

PPP

Vla

SP very slow bowing

PPP

pppp

Vlc

V

7:8

7:8

7:8

7:8

pp

mp

171

Vln I

Vln II

Vla

Vlc

ppp

V

pp

SP

ST

ST molto

remove sordin

SP m

p

ppp

p

I ST

IV

6:4

3:2

ppp < mp > p

ppp

7:8

p

7:8

7:8

7:8

7:8

7:8

7:8

7:8

7:8

7:8

7:8

ppp

I ST

IV

6:4

3:2

ppp < mp > p

ppp

5

176

Vln I

Vln II

Vla

Vlc

mp → *pp*

→ SPm → STm

remove sordin

PRACTISE SORDIN

ST molto, flautando
very slow bowing

III *pp*

IV

ppp

SP

IV *ppp*

remove sordin

remove sordin

poco

6

190

Vln I

Vln II

Vla

Vlc

PRACTISE SORDIN

III *pp*

II

pp

PRACTISE SORDIN

BOWED NORMALLY

ST molto, flautando
very slow bowing

III *pp*

BOWED NORMALLY

ST molto, flautando
very slow bowing

PRACTISE SORDIN

pp

pp

201

Vln I (gliss.)

Vln II

Vla *ppp* *poco* *ppp*

Vlc *ppp* *poco* *ppp* I flautando II

SENZA PRACTISE SORDIN

SENZA PRACTISE SORDIN

SENZA PRACTISE SORDIN

SENZA PRACTISE SORDIN

RH BOTTLENECK touch and release string put bow away

RH BOTTLENECK touch and release string put bow away

RH BOTTLENECK touch and release string put bow away

RH BOTTLENECK touch and release string put bow away

7 $\text{♩} = 100$

Bottleneck passing the octave node of string, resulting in the two parts of the string sounding a glissando departing from both above and below the octave, downwards and upwards through the octave, and arriving on the opposite departure pitches.

212

Vln I

Vln II

Vla

Vlc

mf

mp

(from bridge)

I II III IV III II I II III IV III II I II ! Opposite gliss. direction III IV III II I II

release bottleneck with sound

w/nail

IV keep fingering up to bar 226

sim.

sim.

sim.

217

Vln I

Vln II

Vla

Vlc

mf

mf

(sim.)

! Previous gliss. direction
! Phase change

! Phase change

sim.

221

Vln I

Vln II

Vla

Vlc

mf

mf

I II III IV III II I II III IV III II I II III IV

225 **8**

Vln I

Vln II

Vla

Vlc

p

III II I

I II III

II

229

Vln I

Vln II

Vla

Vlc

sim.

sim.

arco IV flautando sempre

pp *p* *pp* *p* *pp* *p*

sim.

SPm
SP
ORD
ST
STm

V

236

Vln I

Vln II

Vla

Vlc

SPm
SP
ORD
ST
STm

>pp *< p* *ppp* *< p* *pp* *p* *pp*

saltando

9 ♩ = 72

242

Vln I

Vln II

Vla

Vlc

RH I

LH + stop and pluck w/nail *mf*

LH I > tambura *mf*

gliss

6:4 6:4 6:4

RH keep steady

fast gliss trill

trem. non trem.

remove bottleneck with sound

(non gliss)

ST

V

III IV *mp* *pp* *p* *pp*

put bottleneck away

Pizz I # *mp*

Pizz II # *mp*

246

6:4 6:4 6:4 6:4 6:4 6:4

put bottleneck away

Vln I

Vln II

non trem gliss

LH pizz

non gliss

non gliss

gliss

non gliss

gliss with fast gliss trill

Vla

V

III IV

p

pp

p

Vlc

III Pizz

mp

III Pizz

mp

250

Vln I

Vln II

Vla

Vlc

mp

mp

pp

mp

mp

mp

non gl

trem

non trem

6:4

Pizz

II

I

V

IV

IV

254

Vln I

Pizz ⁸

I

mp

mp

Vln II

Vla

Pizz

p

RH pick up e-bow

Vlc

Pizz III

mp

IV Pizz

mp

RH pick up e-bow

258 Pizz *mp* III (•) Pizz *mp* III (•)

Vln I

Vln II

Vla

Vlc

LH BOTTLENECK

RH I II tambura *mf*

gliss

1) 8/9 2/3 1/3

ff

mf

mf

mf

263

Cadenza

Cadenza

Cadenza

Cadenza

E-BOW

about 40 sec.

15^{ma}

(ca. b[♭])

E-BOW

about 40 sec.

I only

(ca. a[♯])

loco

tambura
mf

tambura
mf

3
(more movement and pressure)

Vln I

Vln II

Vla

Vlc

266 **10** ♩ = 85

Vln I

Vln II

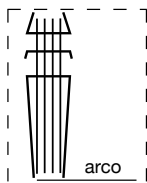
Vla

Vlc



11

274 **BOW BEYOND NUT**
arco dolce flautando

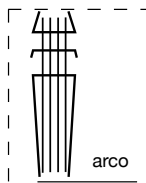


put vln in lap,
pick up two bottle-necks;
one in each hand

Vln I

pp

BOW BEYOND NUT
arco dolce flautando

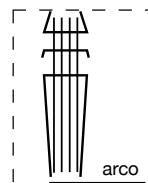


put vln in lap,
pick up two bottle-necks;
one in each hand

Vln II

pp

BOW BEYOND NUT
arco dolce flautando



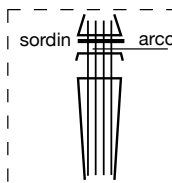
II

pp

Vla

quietly remove e-bow

CON SORD
mount sordin 1/3
of the length
behind the bridge



BOW BEHIND BRIDGE

arco flautando - quasi "a"

II

pp

Vlc

quietly remove e-bow

12 ♩ = 72

BOTTLENECK

RH upper part of string, slide down 1) sim.

LH lower part of string, slide up 1)

RH upper part of string, slide down 2) sim.

LH lower part of string, slide up 2)

RH upper part of string, slide up 3) sim.

LH lower part of string, slide up 3)

mp

mp

mp

mp

1) RH LH

2) RH LH

3) RH LH

282

6/8

6/8

4/8

4/8

Vln I

Vln II

Vla

Vlc

E-BOW

tilt slightly away

put down bow, turn on e-bow

put down bow, turn on e-bow

put bottle-necks away - pick up bow

pp

mp

sim.

I RH

I LH

294

4/8

4/8

4/8

4/8

Vln I

Vln II

Vla

Vlc

306 **13**

Vln I

Vln II

Vla

Vlc

BOW AT TAILPIECE - lower part
arco flautando dolcissimo

ppp

tilt slightly closer

tilt e-bow

ppp

use II to keep e-bow in a stable position - wait for III to start vibrating

E-BOW

tilt slightly away

tilt slightly closer

sim.

pp

ppp

pp

ppp

322 **14**

Vln I

Vln II

Vla

Vlc

put bottlenecks away

V

saltando

saltando

V

V

V

V

saltando

saltando

V

V

saltando

saltando

V

saltando

tilt slowly away

pp

ppp

pp

ppp

339 15 $\text{♩} = 72$

← ♩ = ♩ → silent dampening, audible release of strings

HANDS

Vln I *pp*

Vln II saltando V saltando *ppp* arco flautando V

Vla *pp* silent dampening, audible release of strings HANDS *pppp* BOW AT TAILPIECE - lower part arco flautando dolcissimo

Vlc *pp* tilt slowly away turn off and put e-bow away

349

BOW PARTLY AT TAILPIECE - PARTLY AT III arco flautando, dolce espressivo

Vln I *p*

Vln II V

Vla HANDS *pp* silent dampening, audible release of strings Pizz *p*

Vlc silent dampening, audible release of strings HANDS *pp*

357

Vln I

BOWED NORMALLY

ST V

PPP

PP

Vln II

BOWED NORMALLY

ST

PPP

BOW AT TAILPIECE - lower part
arco flautando dolcissimo

pppp

Vla

BOW BEHIND BRIDGE
arco flautando dolcissimo

BOW AT TAILPIECE - lower part
arco flautando dolcissimo

Vlc

pppp

Pizz

8

p

364

Vln I

HANDS

III IV

pp

Vln II

Vla

HANDS

I II

pp

Vlc

16

arco
BOWED NORMALLY
CON SORD - till the end

ST

Vln I

374

pp < f > pp

7:8 5:4 5:4 5:4 7:8 5:4

mp > p > pp

arco
BOWED NORMALLY
CON SORD - till the end

ST

Vln II

Vla

pp < f > pp

BOWED NORMALLY
CON SORD poss. - till the end

Vlc

pp < f > pp

9:8 3 3 5

Balanced amplification - not too much
Continuous ampl - no movement

Ampl

I	II	III
VIII	v1	va
VII	vc	v2
	VI	V

378

Vln I

Musical score for Violin I (Vln I). The score consists of two staves. The upper staff is in treble clef and the lower staff is in bass clef. The key signature has one sharp (F#). The time signature is 7/8. The score includes various musical notations such as slurs, accents, and dynamic markings. A crescendo hairpin is shown with the markings $p > pp$. The score is divided into measures by vertical bar lines. Above the staves, there are fingering indications (V, II, III, IV) and some rhythmic markings (7:8, 5:4). A dynamic marking mp is present in the later measures.

BOWED NORMALLY

CON SORD - till the end

Vln II

Musical score for Violin II (Vln II). The score consists of two staves. The upper staff is in treble clef and the lower staff is in bass clef. The key signature has one sharp (F#). The time signature is 7/8. The score includes various musical notations such as slurs, accents, and dynamic markings. A dynamic marking p is present at the beginning. The score is divided into measures by vertical bar lines. Above the staves, there are fingering indications (III, IV) and some rhythmic markings (7:8, 5:4). A dynamic marking mp is present in the later measures.

Vla

Musical score for Viola (Vla). The score consists of two staves. The upper staff is in treble clef and the lower staff is in bass clef. The key signature has one sharp (F#). The time signature is 7/8. The score includes various musical notations such as slurs, accents, and dynamic markings. A dynamic marking p is present at the beginning. The score is divided into measures by vertical bar lines. Above the staves, there are fingering indications (II, I°) and some rhythmic markings (3, 5). A dynamic marking mp is present in the later measures.

Vlc

Musical score for Violoncello (Vlc). The score consists of two staves. The upper staff is in treble clef and the lower staff is in bass clef. The key signature has one sharp (F#). The time signature is 7/8. The score includes various musical notations such as slurs, accents, and dynamic markings. A dynamic marking pp is present at the beginning. The score is divided into measures by vertical bar lines. Above the staves, there are fingering indications (IV) and some rhythmic markings (3, 5:4, 7:8). A dynamic marking mp is present in the later measures.

383

Vln I

mf

Detailed description: This system contains two staves for Violin I. The upper staff features a melodic line with several measures containing five-fingered intervals (marked '5') and various note values. The lower staff provides a harmonic accompaniment with sixteenth-note patterns and some triplet markings (marked '3'). A dynamic marking of *mf* (mezzo-forte) is placed below the lower staff.

Vln II

mp

mf

Detailed description: This system contains two staves for Violin II. The upper staff has a melodic line with some sixteenth-note runs and rests. The lower staff features a more active accompaniment with sixteenth-note patterns. Dynamic markings include *mp* (mezzo-piano) at the beginning and *mf* (mezzo-forte) later in the system.

Vla

ST molto sempre

sffz f

Detailed description: This system contains a single staff for Viola. It starts with a few notes and rests, then enters with a melodic line. The dynamic marking *sffz* (sforzando) is used for the first measure, and *f* (forte) is used for the subsequent measures. The instruction *ST molto sempre* is written above the staff.

Vlc

ST molto sempre

sffz f

Detailed description: This system contains two staves for Violoncello. The upper staff has a melodic line with some sixteenth-note patterns. The lower staff features a more active accompaniment with sixteenth-note patterns. Dynamic markings include *sffz* (sforzando) and *f* (forte). The instruction *ST molto sempre* is written above the upper staff.

388

17 $\text{♩} = 85$

Vln I

ORD III very slow continuous glissando

IV

f

Vln II

ORD III very slow continuous glissando

IV

p

f

Vla

ORD II very slow continuous glissando

III

f

Vlc

ORD I very slow continuous glissando

II

f

18

395

Vln I

mp sempre

Vln II

mp sempre

Vla

mp sempre

Vlc

mp sempre

Ampl

4/2

Trig 1

Spat tutti: = 85 / = 1

tutti cross circling clockwise


0.0 v1	va 0.25
0.75 vc	v2 0.5

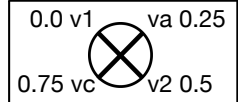
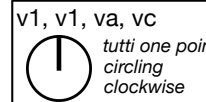
Vln I *mp sempre* *f* *mp* *p* *pp* ST molto II III IV (ST molto) non vibrato, cool, distant *pp*

Vln II *mp sempre* ST molto III IV *pp* (ST molto) non vibrato, cool, distant *pp*

Vla *mp sempre* *mf* *mp* *pp* II III ST molto (ST molto) non vibrato, cool, distant *pp*

Vlc *mp sempre* *mf* *p* ST molto III (ST molto) non vibrato, cool, distant *pp*

Trig 2
 Spat tutti: ♩ = 85 / ♩ = 1
 Envelope tutti: ♩ = 85 / ♩ = 1
 Introduce envelope amplitude:
 (Envelopes go on until bar 382)

Trig 3
 Env: /
 Spat tutti: ♩ = 85 / ♩ = 1
 Spat instrument:

 gradually in ca. 0:10


Ampl 

410 **21**

Vln I *pp*

Vln II *pp*

Vla *pp*

Vlc *p*

Trig 4

Env: /
Spat tutti: /
Spat instrument:

tutti one point circling clockwise

gradually in ca. 0:10

tutti cross circling clockwise

0.0 v1 vc 0.25
0.75 va v2 0.5

422 **22**

Vln I ST sempre flautando clean, senza vibrato! *mp* *mf* *mp* *p*

Vln II ST sempre flautando clean, senza vibrato! *ppp p* *mp* *mf* *mp* *p sempre*

Vla ST sempre flautando clean, senza vibrato! *mp* *mf* *mp* *p sempre*

Vlc ST sempre flautando clean, senza vibrato! *mp* *mf* *mp* *p sempre*

Trig 5

Env tutti: ♩ = 85 / ♪ = 1

Spat tutti: ♩ = 85 / ♪ = 1

16ths stable shifting

0.0 v1 vc 0.25 0.0 v2 va 0.25
0.75 va v2 0.5 0.75 vc v1 0.5

23

436

Very gently, tenuto sempre, sotto voce
SP solo intenso sempre (up to 30 / bar 586)

SP molto

Vln I

Vln II

Vla

Vlc

Ampl

Trig 6

Env + spat: = 85
 Spat tutti: = 1
 Env v1 + v2: = 1
 Env va + vc: then = 1

16th alternation in displaced pairs

Trig 7

Env + spat: = 85
 Env v1 + v2: = 1
 Env va + vc: = 1
 Spat v1 + v2: = 1
 Spat va + vc: = 1

thus

Vln I

Vln II

Vla

Vlc

ST

(poco)

bow I and III only
keep II silently depressed

loco

Ampl

Trig 8

Env v1 + v2: ♩ = 85 / ♩ = 1

Env va + vc: ♩ = 85 / ♩ = 1

Spat v1 + v2: ♩ = 85 / ♩ = 1

Spat va + vc: ♩ = "86" / ♩ = 1

one slowly circling pair with one stable pair

Trig 8

Env: /

Spat v1 + v2: ♩ = 85 / ♩ = 1

Spat va + vc: ♩ = "84" / ♩ = 1

va + vc slowly circling back into sync with v1 and v2

461

Vln I

Vln II

Vla

Vlc

III *mf*

III

III

II

IV (1/2)

I

II

Ampl

Env:

Spat v1 + v2: ♩ = 85 / ♩ = 1

Spat va + vc: ♩ = 85 / ♩ = 1

Trig 9

Env tutti: ♩ = 85 / ♩ = 1

Spat tutti: ♩ = "84" / ♩ = 1

Pairs in sync slowly circling counter-clockwise



473

Vln I

Vln II

Vla

Vlc

I (1/5) *f*

II

III

I (1/5) *p*

II

I (4/7)

III

IV (7/9) *mp*

I

III

I *8va*

loco

I (loco)

I *8va*

loco

I (loco)

485

II (1/6) ORD $\frac{8}{\text{---}}$

Vln I p mp ST I $\frac{8}{\text{---}}$ (1/8)

Vln II II (5/6)

Vla $8va$ I I loco II I

Vlc II IV I $8va$ I loco

Ampl Trig 10

Env: ---

Spat v1 + v2: --- = 1

Spat va + vc: --- = 1

Re-establish cross

498

Vln I SP III mf IV (1/2)

Vln II II III II

Vla III

Vlc $8va$ II III loco

Env: ---

Spat tutti: --- = "83" / --- = 1

Cross slowly circling counter-clockwise

511 **27**

SP m → SP → ST → ST molto flautando

Vln I *f* → *mf* → *mp* → *p* → *pp*

Vln II *pp*

Vla *mp*

Vlc *mp*

Ampl

Trig 11

Env v1 + v2: ♩ = 85 / = env va + vc accel.....
 Env va + vc: ♩ = 85 / = (shortening envelopes)
 Spat tutti:

env va + vc accel..... al ♩ = 170 ... =

Env v1 + v2: ♩ = 85 / =
 Env va + vc: ♩ = 85 / =
 Spat:

519

Vln I *p* → *mp*

Vln II *mp sub.* → *p*

Vla *p*

Vlc *mf* → *p*

III (3/7)

III

III

III

III

530 28

Vln I

Vln II

Vla

Vlc

Trig 12

Env v1 + v2: $\text{♩} = 85 / \text{♩} = \square$ (subito)

Env va + vc: $\text{♩} = 85 / \text{♩} = \square$

Spat: $\text{♩} / \text{♩} = \text{♩}$

539

Vln I

Vln II

Vla

Vlc

SP

f

mp

547

Vln I

Vln II

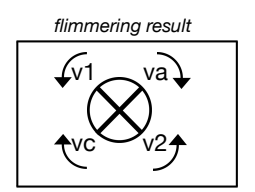
Vla

Vlc

Ampl

Trig 13

Env individually variable: $\text{♩} = +/- "85" / \text{♩} = \square$
 Spat v1 + v2: 1) $\text{♩} = +/- "85" / \text{♩} = 1$
 2) rit. al $\text{♩} = 0$ (no movement)
 3) accel. al $\text{♩} = +/- "85" / \text{♩} = 1$ NB! circling counter-clockwise
 Spat va + vc: $\text{♩} = +/- "85" / \text{♩} = 1$



561

Vln I *tutti bowing*

Vln II *I solo* *mp* *pp* *mp* *pp* *mp* II (8/9) *15^{ma}*

Vla *pp* *mp* *mp* II (6/7) *15^{ma}* *poco cresc.* (15)

Vlc *pp* *mp* *pp* *mp* IV (4/7) V III

572

Vln I *poco cresc.*

Vln II *poco cresc.* (3/8) *15* IV (4/5)

Vla I (1/2) II III

Vlc *poco cresc.* II

30

584

Vln I *sempre legato - non vibrato*
ST molto
IV
pp

Vln II *sempre legato - non vibrato*
ST molto
IV
pp

Vla *sempre legato - non vibrato*
ST molto
III
pp

Vlc *sempre legato - non vibrato*
ST molto
pp



593

Vln I *mp*

Vln II III IV *pp* IV *mp*

Vla *pp* *mp*

Vlc *p* *mp*

31 $\text{♩} = 65$

601

Vln I *mf* *cresc. poco a poco*

Vln II *mf* *cresc. poco a poco*

Vla *mf* *cresc. poco a poco*

Vlc *mf* *cresc. poco a poco*

Ampl

Trig 14

Env v1 + v2: $\text{♩} = 130$ / $\text{♩} = \square$

Env va + vc: $\text{♩} = 130$ / $\text{♩} = \square$

Spat v1 + v2: $\text{♩} = 130$ / $\text{♩} = 1$

Spat va + vc: $\text{♩} = 130$ / $\text{♩} = 1$

605

Vln I *f* *cresc. poco a poco*

Vln II *f* *cresc. poco a poco*

Vla *f* *cresc. poco a poco*

Vlc *f* *cresc. poco a poco*

609 32

Vln I *ff sempre* 5:4

Vln II *ff sempre* 9:8

Vla *ff sempre*

Vlc *ff sempre*

Ampl

Trig 15

Env: \sloper

Spat $\downarrow = 130$

v1: $\downarrow = 1$		0.0	clockwise
v2: $\downarrow = 1$		0.5	counter-clockwise
va: $\downarrow = 1$		0.25	clockwise
vc: $\downarrow = 1$		0.75	counter-clockwise

615

Vln I

Vln II

Vla

Vlc

619

Vln I

Vln II

Vla

Vlc



624

Vln I

Vln II

Vla

Vlc

629

Vln I

Vln II

Vla

Vlc



634

Vln I

Vln II

Vla

Vlc

33

Repeat 3 times.

639

Vln I

Vln II

Vla

Vlc

Ampl

Trig 16 Trig only first time.
 Env: nil (all set to 1), thus continuous sound
 Spat ♩ = 130 v1: ♩ = 1 0.25 clockwise
 v2: ♩ = 1 0.75 counter-clockwise
 va: ♩ = 1 0.0 clockwise
 vc: ♩ = 1 0.0 counter-clockwise



644

Vln I

Vln II

Vla

Vlc

649

Vln I

Vln II

Vla

Vlc

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