

# Fractus IV

for Trombone and SuperCollider

**O1**

Trombone

Computer

ca. 1:00: Between Events **o1** and **o2**, improvise on invented material or using the provided gestures as a basis. Improvisation should adhere to the following general guidelines:

- gradually transition from sparse to dense;
- gradually transition from quiet to loud;
- tend toward non-pitched sounds, but do not exclude pitched material entirely; and;
- use plunger mute freely yet discretionally

During this section, the computer will generate trombone-like sounds. The player is encouraged to listen and react to these sounds, and to incorporate those reactions into the improvisation.

The player, at his or her discretion, may depress and hold the foot pedal to record a gesture. The computer will granulate the input while the pedal remains depressed. Upon release, the computer will fade the effect over approximately 6 seconds.

After approximately 1 minute, the computer will culminate in a swath of noise, at which point the player should advance to Event **o2** by quickly double-tapping the foot pedal.

plunger, flutter tongue & gliss.

sing while playing

inhal/exhale, whisper through instrument

slap tongue & gliss.

sudden registral changes

short percussive sounds

loosely  $\text{♩} = 130$

**O2**

3

**mf** < **f**      **mf** → **ff**      **mf**

**ff**

CPU triggers a three-measure noise swell and dramatic hit

## Fractus IV

exploratory and free, as if improvising.  
use plunger as desired through m. 20.

gliss

Tbn. 6      ord → slap tongue

rising tone cluster

percussive gesture loosely at 130 bpm

becomes arrhythmic, pontillistic texture

Tbn. 7      indefinite pitches

occasional held note with crescendo

Tbn. 8      p

Fractus IV

9

Tbn.

indefinite pitches

CPU

deliberately

IO

Tbn.

drop plunger

CPU

strictly  $\text{♩} = 130$

II

Tbn.

CPU

over the next 12 measures, the CPU accompaniment gradually locks to a sixteenth note grid in a pseudo E-flat mixolydian mode. Notated pitches and rhythms in the CPU staff are approximate until m. 22.

Fractus IV

15

Tbn.

gradual crescendo to m. 32

CPU

18

Tbn.

CPU

21

Tbn.

ff

aleatoric pulse with  
B-flat tonal center

bass hit

8vb

CPU

Fractus IV

24

Tbn.

pp

mf

n

bass hit

mf

pitch and timbre vary significantly, but overall texture adheres to a strict pulse

CPU

31

Tbn.

f

mf

CPU

36

Tbn.

f

mf

p

mf

CPU

## Fractus IV

**O4**

Tbn. 41

CPU

with renewed energy

*mp*      *f*

mutated bass hit

*ff*

Tbn. 46

CPU

*mf*

(□)

Tbn. 51

CPU

*mp*

*p* — *ff* — *p*

*p* <

Fractus IV

57

Tbn.

CPU

O5

**05**

61

Tbn.

CPU

pitches drift upward

accompaniment loses sense of pulse

64

Tbn.

CPU

harsh up/down  
glissando growl

Fractus IV

69

Tbn.

aggressive flutter tongue

*f*

*fff*

sudden chime-like resonance

accompaniment resumes 130 bpm pulse

CPU

73

Tbn.

*mf*

gradual decrescendo to approx. m. 97

pulse undergoes a timbral shift and loses sense of pitch

*pp*

CPU

77

Tbn.

*f* *mp*

*ff* *mp*

*mp*

CPU

Fractus IV

81

Tbn. -

CPU {

06

87

Tbn. -

CPU {

scattered echoes

p pitches smear randomly

p cresc.

pulse converges on A with eighth note emphasis and periodic triplet figures

f percussive hit

93

Tbn. -

CPU {

*< ff f mp mf*

recurring granular sweeps

p mf

rising/falling tone cluster

Fractus IV

97

Tbn.

CPU

meandering gliss

101

Tbn.

CPU

extremely short,  
indefinite pitches

105

Tbn.

CPU

Fractus IV

109

Tbn.

flutter tongue with unusual embouchure,  
creating a fast double-tongue-like effect

CPU

*mf* → *ff*

*p* → *f*

O7

pitch range  
expands, tone becomes  
more aggressive

randomly interrupt flutter  
tongue with improvised,  
angular, staccato gestures

II4

Tbn.

CPU

pulse gradually  
becomes arrhythmic

*pp*

121

Tbn.

normal flutter

*ff*      *mf*      *f*

CPU

meandering background tones

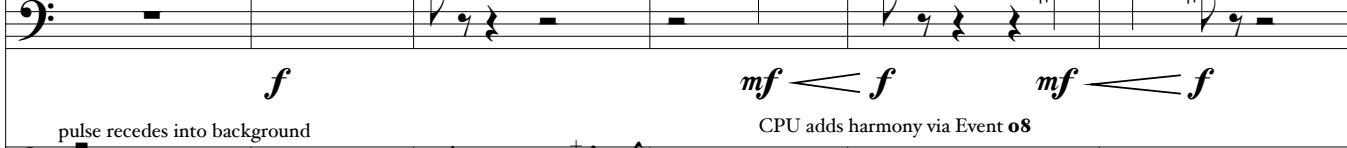
*mp*

Fractus IV

synchronize with visual metronome if necessary      strictly  $\text{♩} = 130$

**127**  

**08**

Tbn. 

CPU 

pulse recedes into background

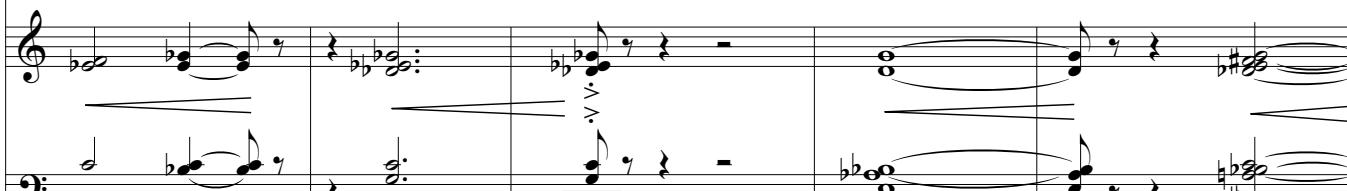
CPU adds harmony via Event **08**

gradual crescendo

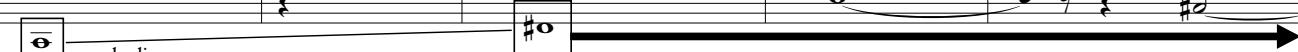


**133**  

**f** 

CPU 

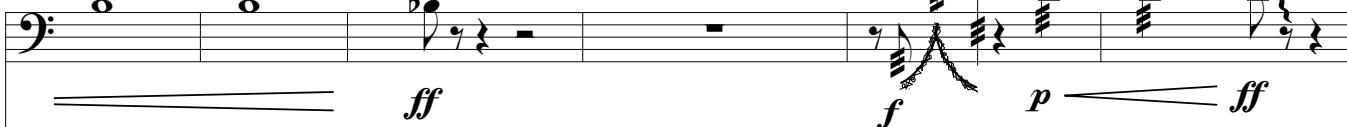
rough gliss.

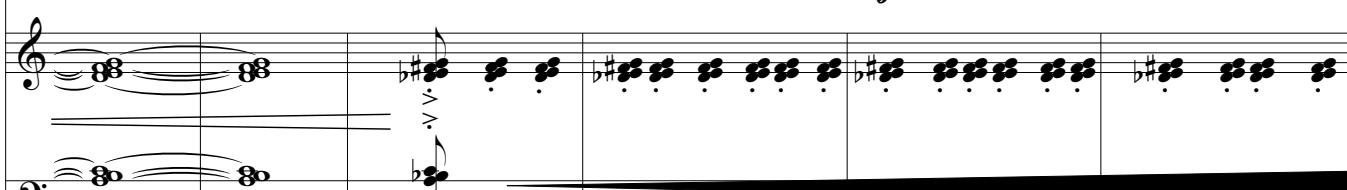


**09**

**138**  

improvise freely with plunger through m. 177

**ff** 

CPU 

harmonization is captured, granulated, and added to climactic texture

Fractus IV

144

Tbn.

noise gradually subsumes all

CPU

148

Tbn.

IO

CPU

152

Tbn.

explore random timbres and techniques  
while following the general shape of the gesture

CPU accompaniment explodes, improvisatory  
trombone gestures are spatialized/granulated wildly

deliberate and  
forceful descent

CPU

fff

ff

CPU is reduced to a dull roar over ca. 20 seconds

Fractus IV

extremely loud and intimidating:  
sing/growl while playing,  
creating beating patterns  
between voice and instrument

Tbn.

153

whisper/mumble  
through trombone

still quite loud,  
but losing energy

**II**

Tbn. CPU

*fff* hold for one full breath      *mf* <> <> <>      *f* ca. 10"      *ff* hold for one full breath

subtle echo effect begins

Tbn.

154

drop plunger, hold  
fermata as desired for  
dramatic purposes

loosely  $\text{♩} = 48$ , dreamlike

Tbn. CPU

*mf* <> <> <>      *mp* <> <> <>

*pp* — *p* —      *#o* — *n* —

dull roar fades out, atonal  
chords gradually fade in

Tbn.

156

*p*

CPU

Fractus IV

Tbn. 159

The score shows the Tuba (Tbn.) and CPU parts. The Tuba part starts with a dynamic of *pp*, followed by *pp* and *mp*. The CPU part consists of three staves: the top staff uses a treble clef and has dynamics *pp*, *p*, and *pp*; the middle staff uses a bass clef and has dynamics *pp*, *8*, and *8*; the bottom staff uses a bass clef and has dynamics *pp*, *8*, and *8*. Measures 159 and 160 are shown.

Tbn. 164

I2  
strictly  $\text{♩} = 40$

Tbn.

164

**Tbn.**

**3** **p** **3**

**pp**

**CPU**

**8** **p** **8**

**pp**

**I2**  
strictly  $\text{♩} = 40$

with overflowing emotion

Tbn. 169 

Tbn. 169 

Fractus IV

Tbn. 177 *accel.* ♩ = 140

Tbn. (Bassoon) starts with a dynamic *p*, followed by a sixteenth-note pattern with dynamics *<f>p>*, *<mf>p*, and *<ff>*. The tempo is marked *accel.* and the note value is ♩ = 140.

CPU (Computer Processor Unit) consists of two staves. The top staff shows a series of eighth-note chords in G major, labeled "CPU pitches smear". The bottom staff shows a continuous eighth-note pattern labeled "pseudo-pitched percussive rhythm".

Musical score for Tbn. and CPU at measure 181. The score includes dynamic markings and performance instructions.

**Tbn. (measures 1-5):**

- Measure 1:  $p < ff$
- Measure 2:  $pp$
- Measure 3:  $< ff$
- Measure 4:  $mp$
- Measure 5:  $ff$
- Measure 6:  $p < ff$
- Measure 7:  $mp$
- Measure 8:  $ff$

**CPU (measures 1-5):**

- Measure 1:  $\text{z}$
- Measure 2:  $\text{z}$
- Measure 3:  $\text{z}$
- Measure 4:  $\text{z}$
- Measure 5:  $\text{z}$

**Performance Instructions:**

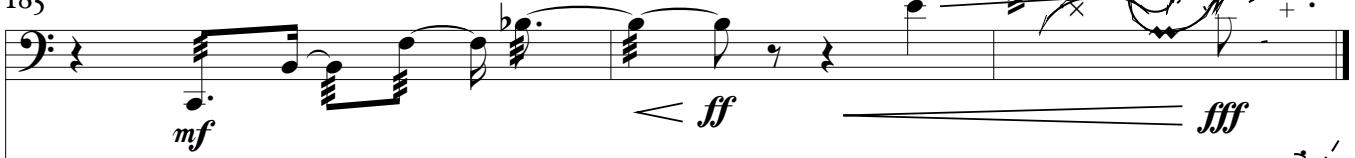
- (synchronized with CPU)
- indefinite pitches

## Fractus IV

**I3**

improvised aggressive gesture with optional plunger, flutter tongue, breath, vocalization, etc.

185

Tbn. 

CPU 