Marc Estibeiro

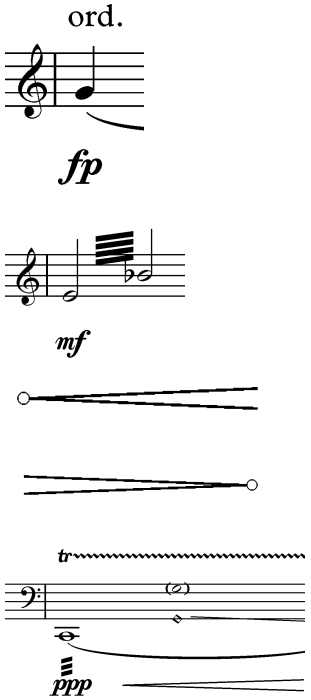
Earth White Fracture

For Contrabass Flute, ‘Cello and Live Electronics

Approximate Duration: 7’20”

Guide to Notation

General marks



ord. Ordinary articulation (cancels previous articulation)

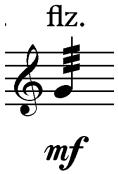
Tremolo, always play as fast as possible

Crescendo dal niente

Diminuendo al niente

Trill, always to indicated note

Contrabass flute



flz. Fluttertongue

'Cello

s.t Sul tasto

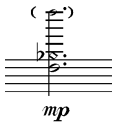
s.p Sul ponticello

molto s.t Sul tasto, as much as possible

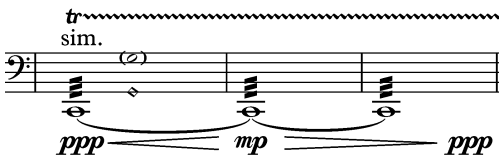
molto s.p Sul ponticello, as much as possible

norm. Normal bow position

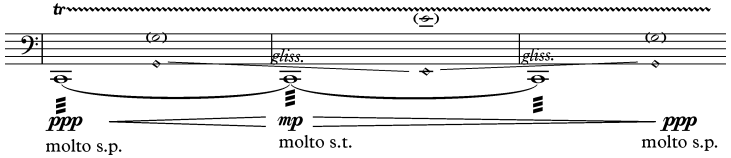
Increase bow pressure to produce noise, then decrease



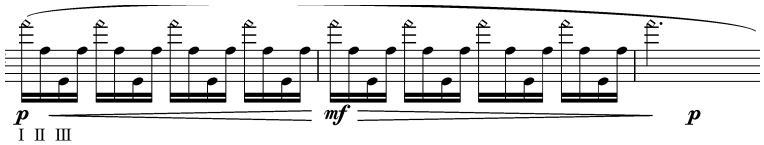
Stopped harmonic



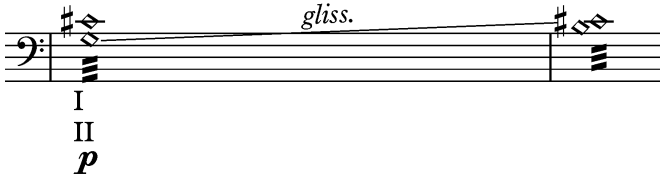
Trill between open string and harmonic node



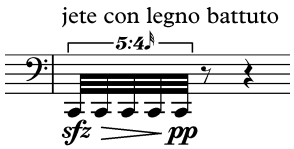
Trill between open string and harmonic nodes. Start glissando immediately.



Arpeggio with harmonic on indicated strings



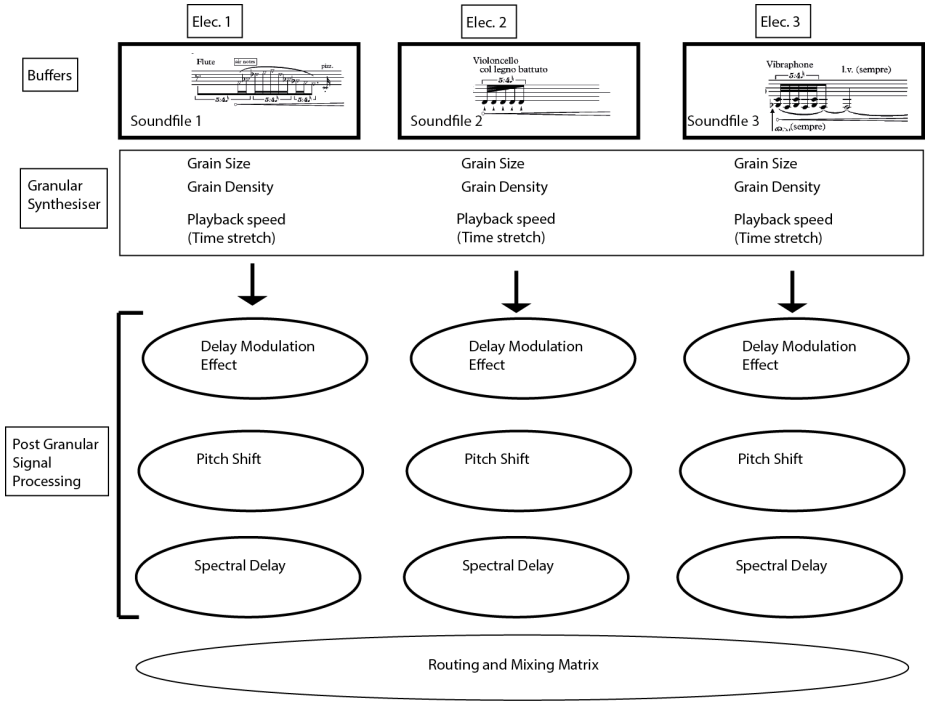
Harmonics with tremolo and glissando on indicated strings. Start glissando immediately



Jeté con legno battuto. As close to the bridge as possible

Guide to the Electronics

The electronic part consists of a three-channel granular synthesiser. A broad overview of the software performance environment is shown below.



The level of the electronic part should be balanced to match the level of the acoustic part as indicated by the dynamics in the score.

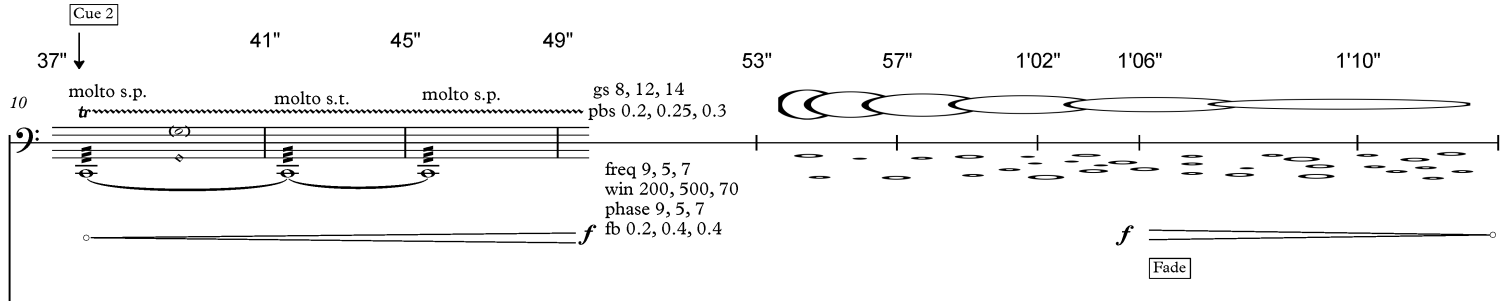
A small mixing desk is necessary in order to make minor adjustments to the levels during the performance.

The acoustic instruments should only be amplified only if necessitated by the size of the performance space.

The electronic part requires a computer running Max v. 6 or above (www.cycling74.com), a suitable digital to analogue convertor, a mixing desk and amplification appropriate for the room. The Max patch is available from the composer on request.

Each of the three channels is followed by identical signal processing chains consisting of a delay modulation effect, a pitch shifter and a spectral delay. Each channel carries out real-time granulation of a soundfile. The soundfile is a pre-recorded gesture taken from the 'cello part. These gestures should be recorded before the performance and edited to eliminate silence and discontinuities at the beginning and end of the recording. The recordings should match, as far as possible, the ambience of the room in which the performance will take place.

An example of a 'cello gesture used in the electronic part is shown below:



Pre-composed events are triggered manually from the software environment using numbered cues. These are indicated on the score as shown in the example above.

Although the events are pre-composed, all processing takes place in real time and there will be subtle but significant differences between performances.

All timings shown are approximate and will vary between performances

Guide to Notation (Electronic Part)

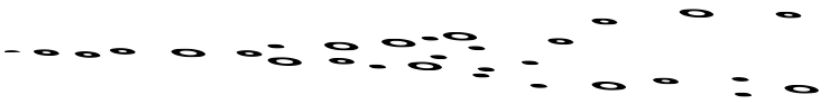
A system of graphic notation has been used to indicate both performance parameters and the resulting textures. Examples from system are described below, together with an explanation of abbreviations used.

gs — Grain size in milliseconds (small)

gs — Grain size in milliseconds (large)

gd — Grain density. Dense – becoming less dense in example

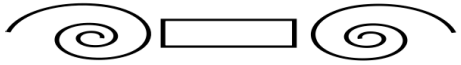
PBS — Play back speed – time stretching effect.
Normal playback speed = 1



Delay Modulation (comb filtering) effect

Fq Frequency
P Phase components
Win Window size
Fb Feedback
Bl Balance

Pitch (Hz)



space 0.2

Space Spectral delay effect (wet dry balance 0.2 in example)

Interpolate between parameters

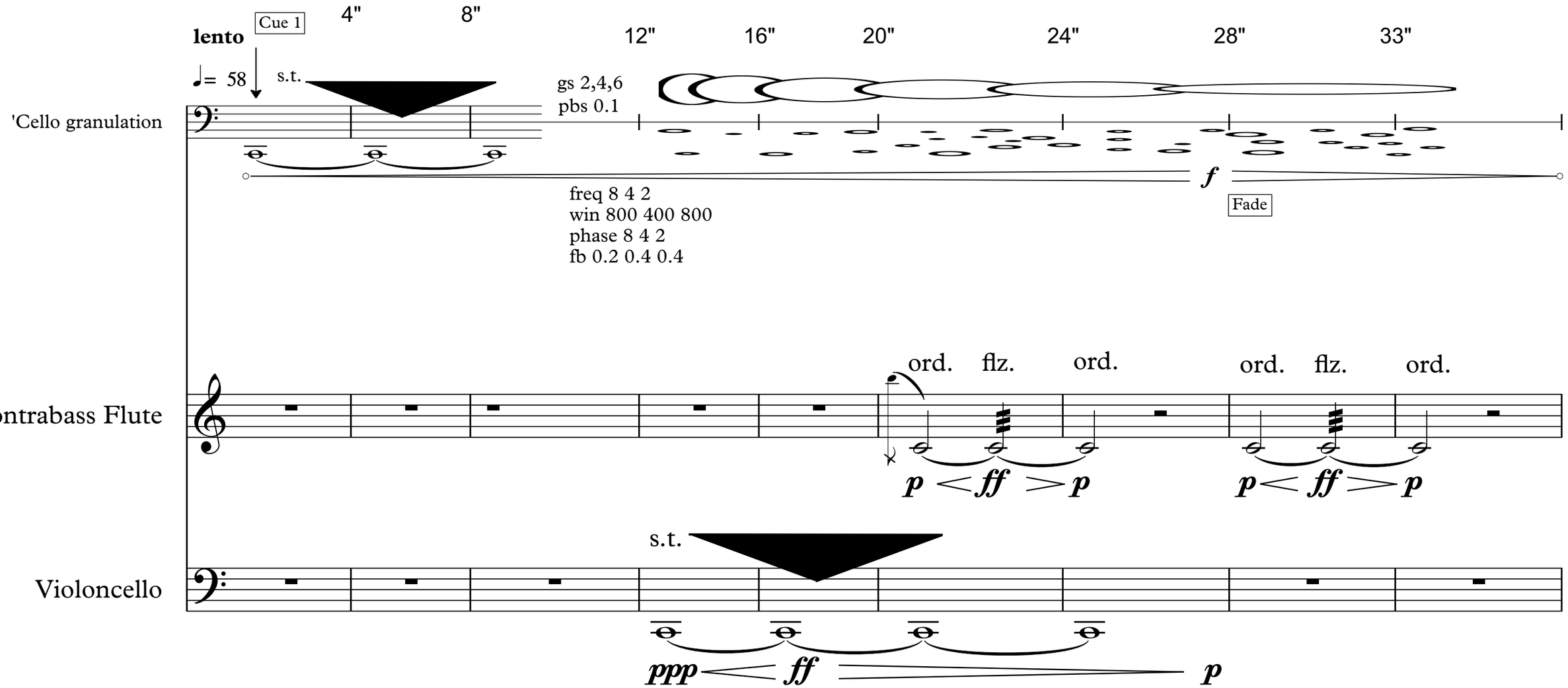
Instruments

Contrbass Flute

‘Cello

Computer running Max 6 or higher, audio interface, mixing desk, suitable microphones and amplification

Earth White Fracture



Cue 2

37" 41" 45" 49" 53" 57" 1'02" 1'06" 1'10"

10

molto s.p. molto s.t. molto s.p.

tr

gs 8, 12, 14
pbs 0.2, 0.25, 0.3

freq 9, 5, 7
win 200, 500, 70
phase 9, 5, 7
fb 0.2, 0.4, 0.4

f *f*

Fade

ord. ord. flz. ord. ord. flz. ord.

mf *f* *p* *ff* *p* *mf* *f* *p* *p* *ff* *p* *mf* *f* *fp*

molto s.p. molto s.t. molto s.p.

tr sim.

ppp *mp* *ppp* *ppp* *mp* *ppp* *ff* *ppp*

1'14"

Cue 3

1'18"

1'22"

1'26"

19

tr

gliss.

gliss.

molto s.p.

molto s.t.

molto s.p.

f

pbs 0.4, 0.45, 0.45

gs 30, 40, 50

freq 6, 5, 4
win 600, 500, 400
phase 6, 5, 4
fb 0.2, 0.4, 0.5

space 0.3

ord. flz. ord. ord. flz. ord. ord. flz. ord.

fp mf p *mf* > *p* *fp mf p* *fp mf p* *mf* > *p*

molto s.p. molto s.t. molto s.p.

tr

ppp *mp* *ppp*

1'31" 1'35" 1'39" 1'43" 1'47"

23

f

Fade

ord. flz. ord. ord. flz. ord. ord. flz. ord.

mf *p* *fp* *mf* *p* *mf* *p* *fp* *mf* *p* *fp* *mf* *p*

tr

(o) (o) (o)

gliss. *gliss.*

ppp *mp* *ppp*

molto s.p. molto s.t. molto s.p.

1'51"
Cue 4
1'55"
1'59"
2'04"
2'08"
pbs 0.1, 0.01, 0.2
gs 30, 40, 50
28
molto s.p.
tr
gliss.
gliss.
pitch 0, 2000, -2000
freq 6, 5, 4
win 600, 500, 400
phase 6, 5, 4
fb 0.2, 0.4, 0.4
space 0.3
f
5:4
f pp mf sfz
ord. flz. ord.
p mf p
ord.
flz.
5:4
fp pp mf p mf
f p
ord. flz. ord.
fp mf p
tr
norm.
s.p.
gliss.
molto s.p.
gliss.
s.p.
norm.
ffppp
mp
mf
ppp

2'12" 2'16" 2'20" 2'24"

33

Fade

f

ord. flz. ord. flz. ord. 5:4 flz. ord. fp mf p

p *mf* *p* *mf* *mf* *p* *mf* *fp* *mf* *p*

molto s.p. tr *gliss.* norm.

mf *ppp*

2'28"
Cue 5

2'33"

2'37"

2'41"

pbs 0.01, 0.1, 0.4
gs 200, 400, 800
gd 3500, 4000, 8000

pitch800, -4000, 4000

freq 6, 5, 4
win 600, 500, 400
phase 6, 5, 4
fb 0.2, 0.4, 0.4
(balance 0.2)

space 0.3

37

norm. s.p. norm.

f

flz. ord.

flz. ord. flz. ord. flz. ord.

sfz *mf* *sfz* *sfz* *sfz* *fp* *mf* *p*

norm. s.p. norm.

mf *ff* *p*

2'45" 2'49" 2'53" 2'57" 3'02"

41

f

Fade

flz. ord. ord. flz. ord. ord. flz. ord. flz.

sfz *mf* *fp* *mf* *p* *sfz* *sfz* *sfz* *mf* *pp*

tr

norm. (𝅝) s.p. norm.

mf *ff* *p*

3'06"
Cue 6
3'10"
3'14"
3'18"
pbs 0.01, 0.1, 0.4
gs 400, 800, 1000
gd 4000, 8000, 6000
pitch 220, 6000, -5000
space 0.7
46
I II III
f
flz.
ord.
ord. flz. ord.
sfz *fp* *mf* *f* *mf* *fp* *mf* *p* *mf* *pp* *mf*
5:4
p *mf* *p* *mf* *p*
I II III

3'22" 3'26" 3'31"

50

ord. flz. ord. flz. ord. 5:4

sfz p mf p fp pp mf p mf mf p

p mf p

3'35" 3'39"

53

f

Fade

flz. ord. flz. ord. flz.

mf *f* *p* *sfz* *p* *sfz* *sfz* *sfz*

mf *p*

3'43"
Cue 7
3'47"
3'51"
pitch 500, 600, -800
3'55"
55
gliss.
I
II
f
gs 400, 800, 1000
gd 3500, 2500, 4500
pbs 0.2, 0.4, 0.6
pitch 500, 600, -800
space 0.4
flz.
ord.
flz.
ord.
flz.
ord.
ord.
flz.
ord.
p
mf
sfz
mf
sfz
sfz
sfz
fp
mf
p
gliss.
I
II
p

3'59" 4'04" 4'08" 4'12" 4'16"

59

f

Fade

flz. ord. ord. flz. ord. ord. flz. ord. flz.

mf *f* *p* *sfz* *fp* *mf* *p* *sfz* *sfz* *sfz* *mf* *pp*

gliss.

I
II *p*

4'20"
Cue 8
4'24"
4'28"
4'33"
pbs 0.1, 1, 0.8
gs 120, 800, 100
gd 120, 800, 100
4'37"
pitch 500, 600, -800
space 0.2
64
molto s.p.
molto s.t.
molto s.p.
gliss.
gliss.
II
f
5:4
f pp mf sfz
ord. flz. ord.
p mf p
ord.
flz.
5:4
fp pp mf p mf
ord. flz. ord.
fp mf p
tr
molto s.p.
molto s.t.
molto s.p.
gliss.
gliss.
II
ppp mp ppp

4'41" 4'45" 4'49" 4'53"

69

f

Fade

ord. flz. ord. flz. ord. 5:4 flz. ord. ord. flz. ord.

p *mf* *p* *mf* *mf* *p* *mf* *fp* *mf* *p*

tr

molto s.p. molto s.t. molto s.p.

gliss. *gliss.*

ppp *mp* *ppp*

II

4'57"
Cue 9
5'02"
5'06"
5'10"
pitch 20, -20, 40
gs 90, 80, 100
pbs 0.8, 0.9, 0.7
freq 8, 4, 2
win 800, 400, 200
phase 8, 4, 2
fb 0.2, 0.4, 0.2
(balance 0.2)
space 0.2
73
III II I II
norm
molto s.p.
I
f
ord. flz. ord. flz. ord. ord. flz. ord.
fp *mf* *p* *mf* > *p* *fp* *mf* *p* *fp* *mf* *p* *mf* > *p*
III II I II
norm
molto s.p.
I
mp
p
ppp

5'14" 5'18" 5'22" 5'26" 5'31"

77

f

Fade

ord. flz. ord. flz. ord. ord. flz. ord.

mf > *p* *fp* *mf* *p* *mf* > *p* *fp* *mf* *p* *fp* *mf* *p*

norm → molto s.p.

III II I II I

mp > *p* *ppp*

Cue 10

5'35"

5'39"

5'43"

82

gliss.

gliss.

f

pitch 10, -10, 20

gs 70, 60, 50

pbs 0.6, 0.7, 0.5

5'47"

5'51"

f

Fade

freq 8, 4, 2
win 800, 400, 200
phase 8, 4, 2
fb 0.2, 0.4, 0.2
(balance 0.3)

space 0.1

ord.

mf *f*

ord.

flz.

ord.

p *ff* *p*

mf *f* *p*

norm

gliss.

gliss.

mp *mf* *ff*

mp

5'55"
Cue 11

5'59"

6'04"
gs 15, 27, 10

6'08"

87

jete con legno battuto

5:4

pbs0.01, 0.05, 0.02

freq 2, 4, 2
win 800, 400, 200
phase 2, 4, 2
fb 0.2, 0.2, 0.2
(balance 0.6)

f

ord. flz. ord.

p *ff* *p* *mf* *f* *fp*

jete con legno battuto

5:4

sfz *pp*

sim sempre

5:4

sfz *sfz*

6'12" 6'16" 6'20" 6'24" 6'28" 6'33"

91

f

Fade

flz. ord. flz. ord.

ff *p* *mf* *f* *fp* *ff* *p*

5:4 5:4

sfz *sfz*

Cue 12

6'37" 6'41" 6'45" 6'49" 6'53" 6'57" 7'02" 7'06" 7'10" 7'14"

97

pbs 0.2, 0.1, 0.05

gs 2, 4, 6

freq 8, 9, 10
win 800, 900, 1000
phase 8, 9, 10
fb 0.1, 0.1, 0.1
(balance 1)

f

f

Fade

ord. flz. ord. ord. flz. ord. ord. flz. ord. ord. flz. ord.

p < *ff* > *p* *p* < *ff* > *p* *p* < *ff* > *p* *p* < *ff* > *p*

p < *ff* > *p* *p* < *ff* > *p*

7'18"