

Marco Buongiorno Nardelli

# **String Quartet n. 1**

## **Circle Limits**

after M.C. Escher

**Violin I**

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**Movement n. 1 - Circle Limit II**  
*intersections on the hyperbolic plane*

**Movement n. 2 - Circle Limit III**  
*every line is a circle passing through infinity*

**Movement n. 3 - Circle Limit IV**  
*on the harmony of the celestial spheres*



## Movement n. 1 - Circle limit II

*intersections on the hyperbolic plane*

In this first movement, the violin and the cello trade “intersections” with each other in a free space of events. Each of the nine episodes evokes the dynamics of encounter and separation as for two curves that intersect in a point (the greek letter of the episodes’ titles) on a hyper-geometric space to then separate themselves to infinity. Inspired by the woodcut *Circle Limit II* by M.C. Escher.

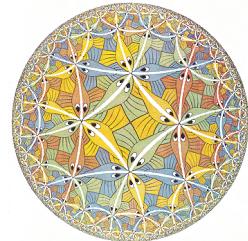


M.C. Escher,  
*Circle limit II*,  
woodcut, 1958.

## Movement n. 2 - Circle limit III

*every line is a circle passing through infinity*

The abstract hyperspaces of non-euclidean geometry are the inspiration for the second movement. As a traveller who accelerates to relativistic velocities will see the pattern of constellations as seen near the Earth continuously evolve according to infinitesimal transformation of dilations, translations and inversions, so the music follows a cyclic patterns where time and structure modulation displace the musical material in a continuously varying contrapuntal landscape. If we define a line to be a circle passing through infinity, then it can be shown that all these transformations map circles to circles, in a continuous, infinite series, as brilliantly exemplified in the woodcut *Circle Limit III* by M.C. Escher.

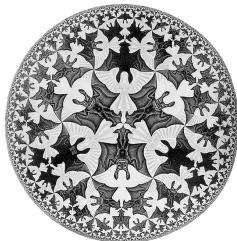


M.C. Escher,  
*Circle limit III*,  
woodcut, 1958.

## Movement n. 3 - Circle limit IV

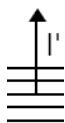
*on the harmony of the celestial spheres*

This last movement is based on a pitch set that encompasses all the musical intervals corresponding to the pythagorean definition of the music of the celestial spheres. From the Earth to the sphere of the fixed stars it goes like: Earth to the Moon, one whole step; Moon to Mercury, half step; Mercury to Venus, half step; Venus to Sun, minor third; Sun to Mars, whole step; Mars to Jupiter, half step; Jupiter to Saturn, half step; Saturn to fixed stars, a minor third. These intervals result in the so-called Pythagorean scale: C,D,Eb,E,G,A,Bb,B,D. Using these pitch classes, I have constructed a movement that reflects the equilibrium between darkness and light, from the Earth to the fixed stars, as symbolized by M.C. Escher in the wood-cut Circle Limit IV.



M.C. Escher,  
*Circle limit IV*,  
woodcut, 1958.

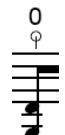
Performance notes:



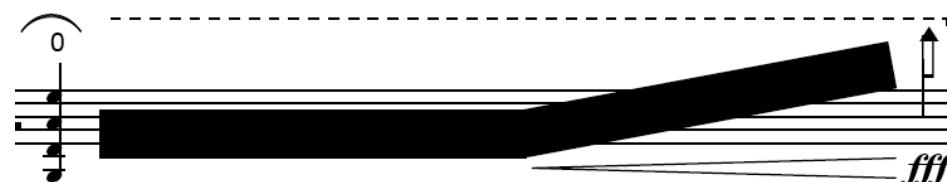
Highest possible note on the specified string



Open string



Snap pizzicato



Disordered arpeggiato on all four string  
- then disordered arpeggiato glissando on all four strings to highest possible cluster note



Artificial harmonic



"whip bow" - whip bow in air to produce a whistling sound



players should apply an increasing pressure on the strings to produce a "grinding" sound. The width of the "ribbon" should give indications on which strings to apply the increasing pressure.



disordered bow vibrato (here shown on an artificial harmonics)

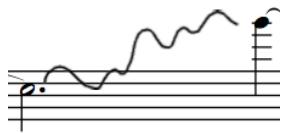
con la voce singing softly at arbitrary pitch while playing



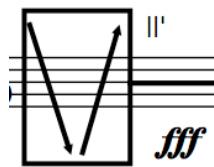
suck-in air with a gasping sound



arpeggiato on the four strings behind the bridge



irregular glissando (if between different notes) or wide irregular vibrato (if between the same notes). Performers should follow the indication of the line in the movement of the finger on the fingerboard.



wide up-down glissando on the string indicated

arco, S.P.-----> Sul tasto-----> S.P.---

move the position of the bow from the *ponticello* to *tasto* and back



# Movement n. 1 - Circle limit II

*intersections on the hyperbolic plane*

Violin II and Viola - TACET

Violin I

senza tempo

**p, non vibrato**

**slow vibrato**

Cello

**p, non vibrato**

Vln. I

subito **p, non vibrato**

**silence**

Vlc.

**silence**

**p, non vibrato**

Vln. I

Vlc.

Vln. I

**f**

**silence**

Vlc.

**f**

**silence**

**IV'**

**ff**

**senza tempo**

**f**

Vln. I      Vlc.

5+3      8      senza tempo

3+5      8      senza tempo

*ff*

Vln. I      Vlc.

$\text{♩} = 120$

0 0      senza tempo

*ff*

0      *f*

3+5      8      senza tempo

*ff*

*f*

Vln. I      Vlc.

0 0      senza tempo

*ff*

0      3+5      8      senza tempo

*ff*

Vln. I      Vlc.

$\delta$

senza tempo, come da lontano

*ppp*

*pont.*

*ppp*

*pont.*

Vln. I

Vlc.

senza tempo, vivo

Vln. I      silence

Vlc.      silence

**ε**

Vln. I

Vlc.

col legno

Vln. I      Vlc.

col legno - - - - - silence

**p**

**col legno**

**ppp**

**col legno**

**ppp**

*senza tempo, rubato*

**p**

**f**

**p**

**f**

**p**

**p**

**pizz.**

**ff**

**pizz.**

**ff**

*sempre molto ritmico, impersonale*  $\text{♪} = 240$

$5=2$

$8$

$2=5$

$8$

**Θ**

Vln. I

Vlc.

Vln. I

Vlc.

Vln. I

*senza rallentare*

Vlc.

silence

silence

*senza tempo, come con rabbia*

**Ψ**

Vln. I

Vlc.

*Vln. I*

*Vlc.*

*Vln. I*

*Vlc.*

The musical score consists of two staves: Violin I (top) and Cello/Violoncello (bottom). The score is divided into three main sections. The first section, starting with *Vln. I*, features dynamic markings *ppp*, *fff*, *ppp*, and *ffff*. The *Vlc.* staff has a similar sequence of markings. The second section, starting with *Vln. I* again, includes a tempo instruction *senza tempo* and dynamic markings *ppp*, *fff*, *ppp*, and *ffff*. The third section, starting with *Vlc.*, includes dynamic markings *ppp*, *fff*, *morendo*, *morendo*, and *attacca subito*. Various performance techniques are indicated by black rectangles on the staves, such as bowing and pizzicato.

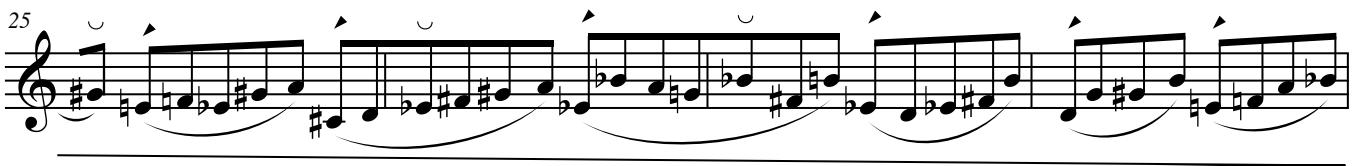
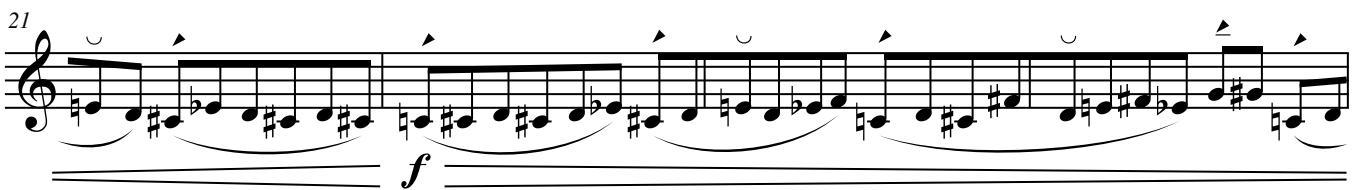
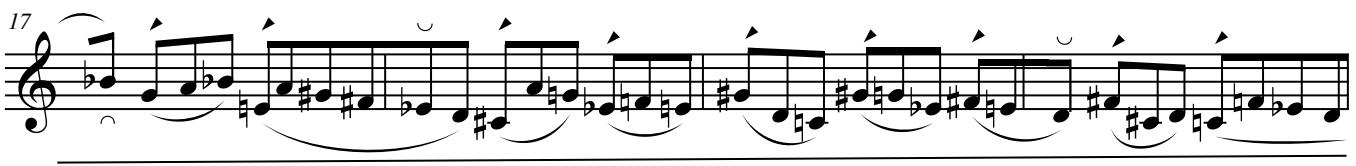
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# Movement n. 2 - Circle Limit III

*every line is a circle passing through infinity*

vivo, with metronomic precision throughout  $\text{♩} = 280$

Violin I



29



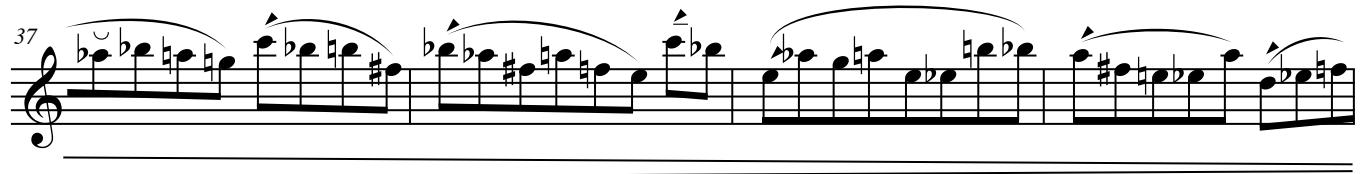
A musical score page showing a single staff in G major. The notes are mostly eighth notes with various accidentals (sharps and flats). The dynamic is **p**.

33



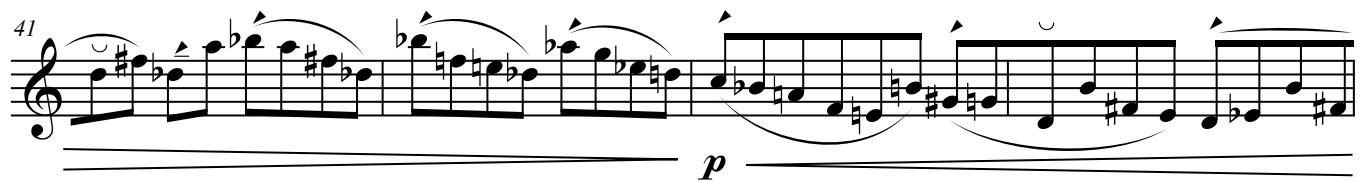
A musical score page showing a single staff in G major. The notes are mostly eighth notes with various accidentals. The dynamic is **f**.

37



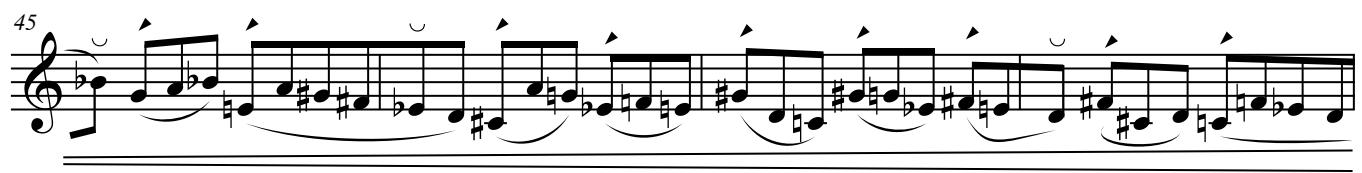
A musical score page showing a single staff in G major. The notes are mostly eighth notes with various accidentals.

41



A musical score page showing a single staff in G major. The notes are mostly eighth notes with various accidentals. The dynamic is **p**.

45



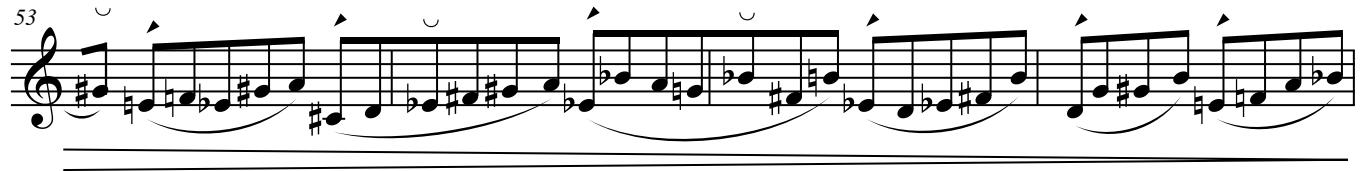
A musical score page showing a single staff in G major. The notes are mostly eighth notes with various accidentals.

49

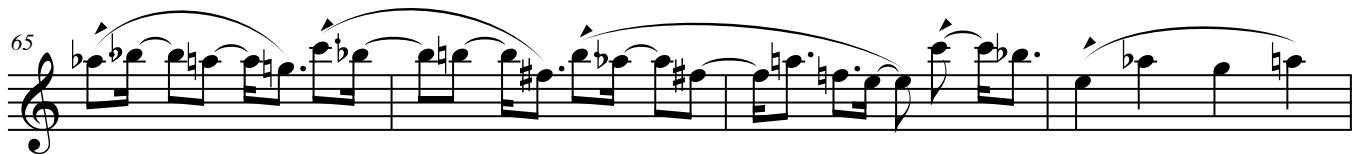
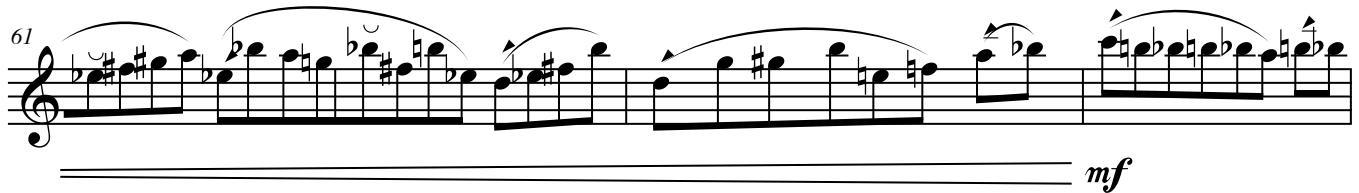
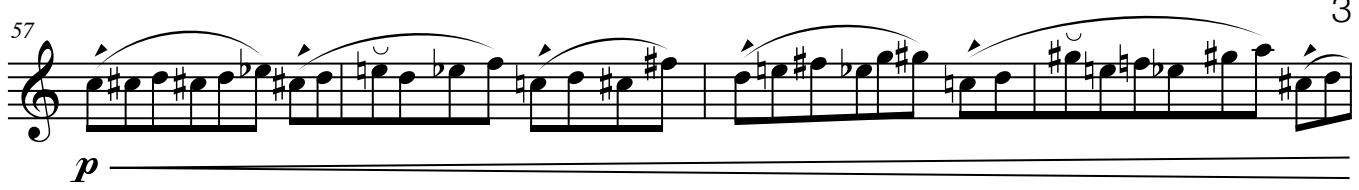


A musical score page showing a single staff in G major. The notes are mostly eighth notes with various accidentals. The dynamic is **f**.

53



A musical score page showing a single staff in G major. The notes are mostly eighth notes with various accidentals.



4  
85

A musical staff in G major (one sharp) with a common time signature (indicated by '4'). The notes are: a quarter note, a half note, a sharp, a half note, a sharp, a half note, a sharp, a half note.

89

A musical staff in G major (one sharp) with a common time signature. The notes include eighth-note pairs with grace notes, followed by a dynamic marking of *ff*. The notes then transition to a dynamic marking of *mf*.

93

A musical staff in G major (one sharp) with a common time signature. The notes are sixteenth-note patterns with grace notes. The dynamic marking changes from *ff* to *mf*.

97

A musical staff in G major (one sharp) with a common time signature. The notes are sixteenth-note patterns with grace notes. The dynamic marking is *mf*.

101

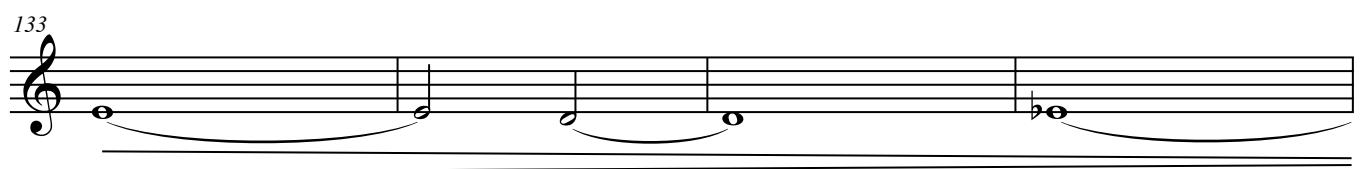
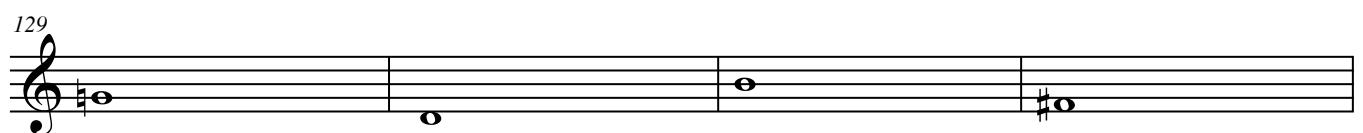
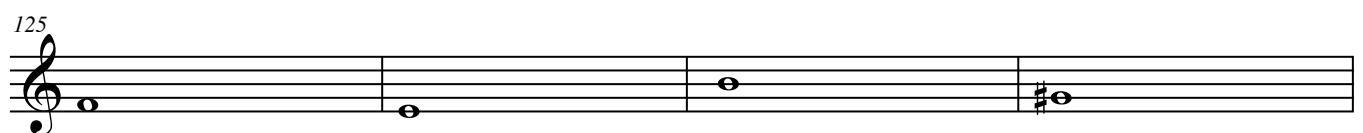
A musical staff in G major (one sharp) with a common time signature. The notes are sixteenth-note patterns with grace notes.

105

A musical staff in G major (one sharp) with a common time signature. The notes are sixteenth-note patterns with grace notes.

109

A musical staff in G major (one sharp) with a common time signature. The notes are sixteenth-note patterns with grace notes.



A musical score fragment showing measures 6-141. The key signature is one sharp. The first measure shows a bass note on the G-line. The second measure shows a bass note on the A-line. The third measure shows a bass note on the B-line. The fourth measure shows a bass note on the C-line. The fifth measure shows a bass note on the D-line.

A musical score fragment for piano. The left hand part starts with a treble clef, a key signature of one sharp (F#), and a tempo marking of 145. The first note is a half note on the A line. The second note is a whole note on the G line, connected by a curved brace. The third note is a whole note on the F line, also connected by a curved brace. The fourth note is a half note on the E line, connected by a curved brace.

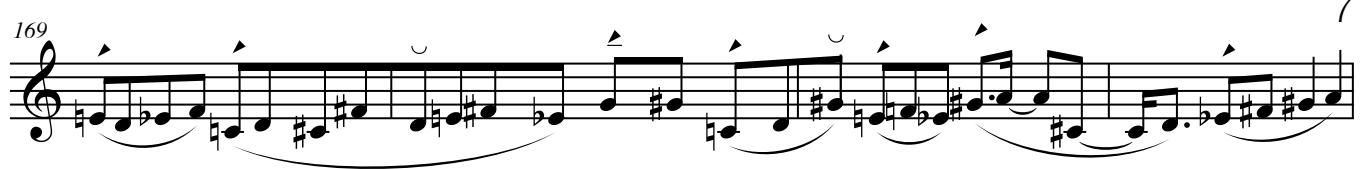
A musical score fragment consisting of a single melodic line on a five-line staff. The key signature is A major (no sharps or flats). The first note is a G (Treble clef), followed by an F# (sharp sign), an E (circle), a D (flat sign), and another E (circle). The notes are connected by vertical stems.

Musical staff showing measures 153-154. The key signature changes to B major (two sharps) at measure 153. The melody consists of eighth notes: G, A, B, C, D, E, F, G. Measure 154 starts with a half note G.

Musical score for piano, page 157, measure 1. The score consists of two staves. The top staff shows a treble clef, a key signature of one sharp (F#), and a common time signature. The bottom staff shows a bass clef and a common time signature. The music begins with a dynamic marking of *mf*. The notes in the first measure are: a quarter note on A, a half note on G, a quarter note on F#, a half note on E, a dotted half note on D, a half note on C, a half note on B, a half note on A, a half note on G, a half note on F#, and a half note on E.

A musical score for piano, page 161. The score consists of two staves. The top staff shows a melodic line in G major, starting with a half note followed by eighth notes. The bottom staff shows harmonic bass notes. The key signature changes from G major to A major at the end of the measure.

A musical score for piano, page 165. The score consists of two staves. The top staff shows a melodic line in G major, starting with a quarter note followed by eighth notes. The bottom staff provides harmonic support with sustained notes and chords. The music is marked with dynamic instructions like 'p' (piano) and 'f' (forte), and includes various note heads and stems.



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# Movement n. 3 - Circle Limit IV

*on the harmony of the celestial spheres*

$\text{♩} = 90$  con freddezza

Violin 1

arco, sul pont.

arco, S.P.

**f pp**

**fpp**

8 S.P.

arco, S.P.

**fpp**

16 S.P.

pizz.

arco, S.P. ▶ Sul tasto ▶ S.P.

**f**

**mp**

**f mp**

arco, S.P. ▶

23 S.P.

arco, S.P.

**fmp**

**fmp**

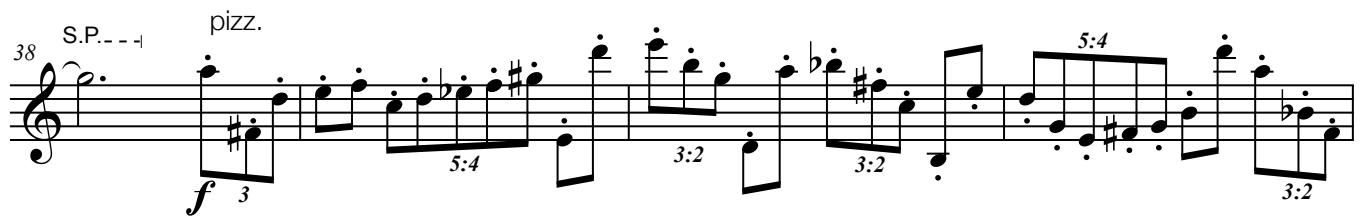
arco, S.P.

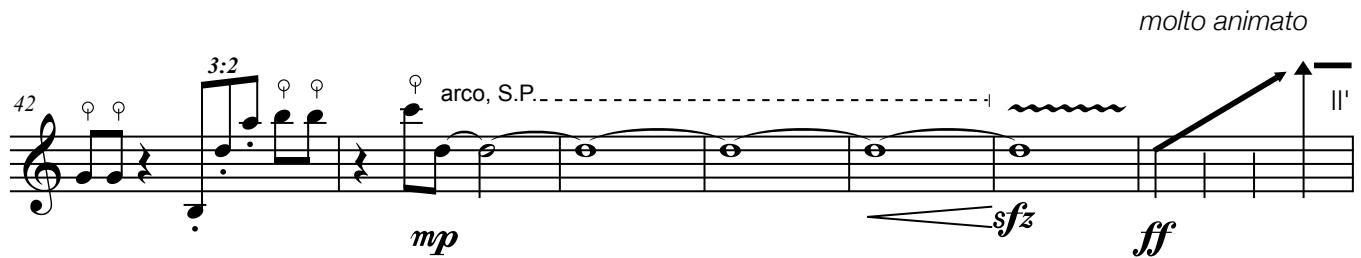
31 S.P. pizz.

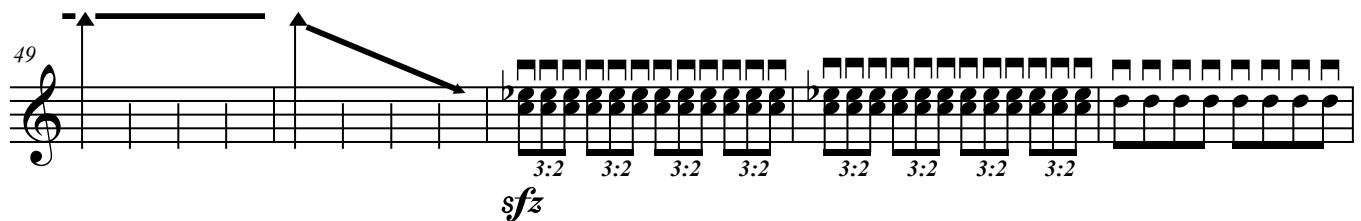
arco, S.P. ▶ arco, S.P. ▶

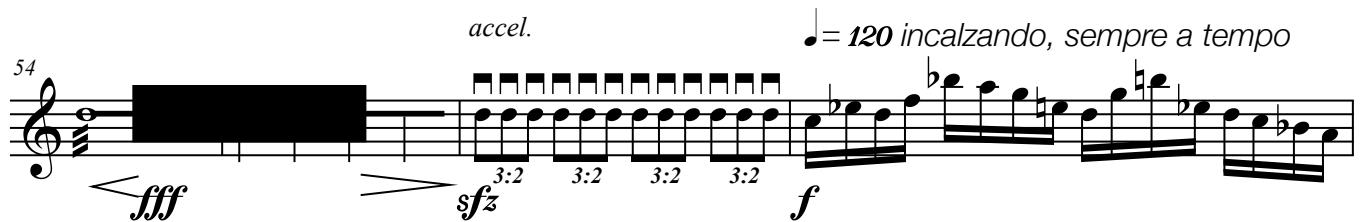
**f**

**fmp**

38 S.P. - - - pizz.  


molto animato  
 42 3:2 arco, S.P. - - - - -  


49 

accel.  $\text{♩} = 120$  incalzando, sempre a tempo  
 54 

58 



63

II'

IV'

**10''**

*ppp p*

con la voce [oh]

67

II'

IV'

**10''**

*Col legno battuto*

*ppp p*

con la voce [toh]

II'

IV'

**10''**

*ppp p*

71

II'

IV'

**10''**

*ppp*

**15''**

*sforzando*

$\text{♩} = 90$  senza vibrare, almost with a digital sound

75

arco

**mf**

*sforzando*

*con la voce*

