

CÚMULO GLOBULAR

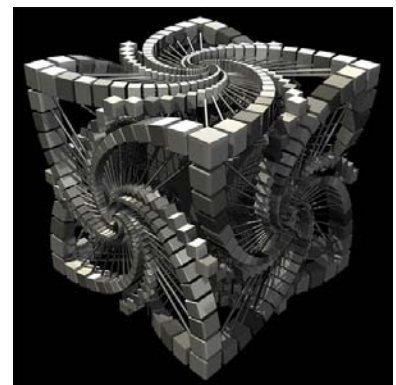
– para cuarteto de cuerda –

La hoja de un árbol, la espiral de una concha, la distribución de los números primos o las grandes estructuras astronómicas tienen algo en común: en su fundamento encontramos la geometría fractal. Los mecanismos recursivos de la autosimilitud resultan cruciales no sólo para entender el mundo a cualquiera de sus escalas, sino también para generar su hipnótica belleza.

Un cúmulo globular es una estructura astronómica formada por miles de estrellas que interactúan entre sí gracias al campo gravitatorio. Las estrellas de un cúmulo se crearon en una misma época y, de una forma casi mágica, se encuentran en un movimiento continuo alrededor de una galaxia, sin colapsar entre sí y sin separarse definitivamente. En ocasiones puede haber colisiones o cambios, pero la macroestructura se mantiene en equilibrio estable durante millones de años.

Esta pieza nace a partir de los conceptos de fractalidad y de cúmulo globular. La música se estructura en base a cinco motivos de carácter diferente que interactúan entre ellos continuamente para formar un organismo con entidad propia. Las duraciones de las secciones y su combinatoria también se han tratado de forma fractal, aunque sin el uso exhaustivo de formulaciones que deriven en una música determinista desde un principio.

El objetivo es que el oyente perciba cómo unos determinados gestos presentados de forma diáfana se van desarrollando durante el transcurso de la pieza, van interactuando entre ellos y pasando de un instrumento a otro, de un timbre a otro, creciendo y renovándose sin perder su identidad hasta culminar en un complejo sonoro diferente pero similar al inicial.

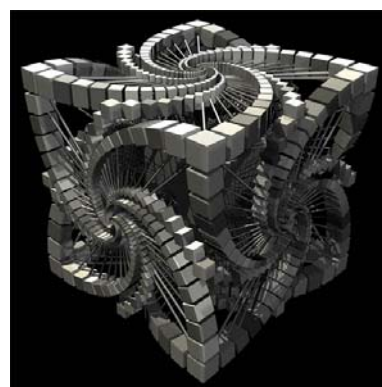


A tree's leaf, a shell' spiral, the prime numbers distribution or the big astronomical structures have something in common: in their fundamentals, fractal geometry can be found. The recursive mechanisms of self-similarity turn out to be essential not only to understand the world at any scale, but also to generate its hypnotic beauty.

A globular cluster is an astronomic structure consisting of thousands of stars that interact between them due to the gravitational field. The stars of a globular cluster were created in the same period and, magically, they are in a continuous movement around a galaxy without collapsing each other and without moving away definitely. Sometimes there are collisions or changes, but the macrostructure is kept in stable equilibrium for millions of years.

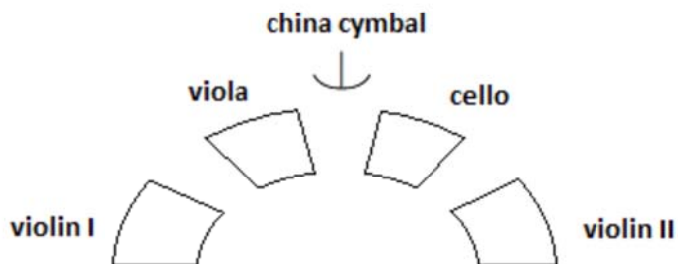
This piece is born taking the concepts of fractal and globular cluster as a starting point. Music is structured based on five motives with a different character that continuously interact witch each other in order to form an organism with its own properties. The length of the different sections and their combinatorics is also treated in a fractal way, although exhaustive formulations that derive in a deterministic music since the very beginning have been avoided.

The goal is that listener notices how some specific gestures, presented in a clear way, are developed in the course of the piece. These motives are establishing links between them, traveling through the different instruments, modifying their timbrical appearance, and amongst all, growing and renovating themselves without altering their identity, so at the end they reach the top being a sound entity that is different but also similar to the initial one.



NOTAS PARA LA INTERPRETACIÓN

Disposición:



El cello también tocará el plato chino. Se recomienda usar un arco de baja calidad para ello.

Símbolos:

calderones (duración creciente)

= 1/4 de tono ascendente

= 1/4 de tono descendente

= 3/4 de tono ascendente

= 3/4 de tono descendente

s.t. = *sul tasto*

al pont. = *al ponticello*, tocar cerca del puente

s.p. = *sul ponticello*, tocar físicamente encima del puente

= notación para rasgar el borde del plato

= pasar el arco por el "arco central" del instrumento

Una alteración afecta sólo a la nota siguiente.

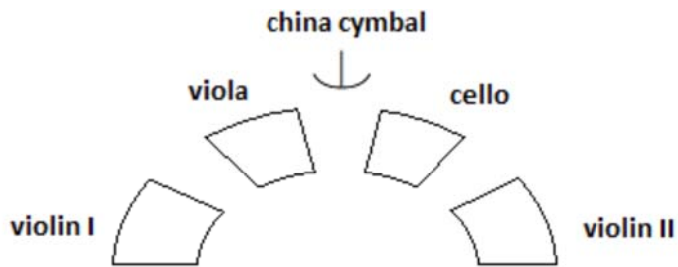
Los glissandi se tocarán a velocidad constante entre las notas que los delimitan.

Los valores metronómicos son orientativos

Duración aproximada: 7.5 min.

GUIDELINES FOR PERFORMANCE

Instruments disposition:



The cellist will also play the china cymbal. A lower-quality bow it is recommended for this aim.

Symbols:

 fermata (growing length)

\sharp = 1/4 tone higher

\flat = 1/4 tone lower


$\sharp\sharp$ = 3/4 tone higher


$\flat\flat$ = 3/4 tone lower

s.t. = *sul tasto*

al pont. = *al ponticello*, play near the bridge

s.p. = *sul ponticello*, play physically on the bridge

 = notation for drawing the cymbal edge

 = draw the bow across the middle bout (or "central rib") of the instrument

One alteration affects only to the next note.

Glissandi will be played at a constant speed between the notes.

Metronomic values will be taken as a guide.

Approximate duration: 7.5 min.

Cúmulo globular

- para cuarteto de cuerda -

Enigmático ♩ = 60

Violin I: *sord.*, *s.t.*, *al pont.*, *al pont.*, *s.p.*, *al pont.*, *s.p.*, *5*, *fff*, [sin moverse]

Violin II: *sord.*, *s.p.*, *fff*, [sin moverse]

Viola: *sord.*, *f*, *pizz.*, *fff*, [sin moverse]

Cello: *sord.*, *fff*, *pizz.*, *fff*, [sin moverse]

Vln. I: *ord.*, *s.p.*, *p* < *ffp*, *pp*, *pp* < *mf*, *ord.*, *al pont.*

Vln. II: *ord.*, *s.p.*, *p* < *ffp*, *pp*, *pp* < *mf*, *ord.*, *al pont.*

Vla.: *ord.*, *arco*, *s.p.*, *p* < *ffp*, *pp*, *ord.*, *al pont.*, *p* < *f*

Vc.: *ord.*, *arco*, *s.p.*, *cambiar arco*, *arco normal*, *al pont.*, *p* < *fff*, *p* < *f*

9

Vln. I s.p. ord. — al pont.
mp sfz pp ppp mf p mp > p ppp

Vln. II s.p. ord. — al pont.
mp sfz pp ppp mf p mp > p ppp

Vla. s.p. ord. — al pont.
mp sfz pp pp f p mf > p ppp

Vc. s.p. ord. — al pont.
sfz pp f p f p > ppp

14

Vln. I *mp f* senza sord.

Vln. II ord. — s.p. senza sord. s.t. — al pont. al pont. — s.p.
p f ppp < f ppp < ff

Vla. s.t. s.p. senza sord. *pp f ff*

Vc. s.t. s.p. senza sord. pizz. *pp f f ff*

8va-

19

Vln. I s.p. *fff* [sin moverse] *p < fp* *p < fp* ord. s.p.

Vln. II al pont. s.p. *ppp* *fff* [sin moverse] *p < fp* *p < fp* ord. s.p.

Vla. *ppp* *mf* *fff* [sin moverse] arco ord. s.p. *p < fp*

Vc. *fff* [sin moverse] arco ord. s.p. *p < fp*

22

piu mosso
♩ = 90
8va ord.

Vln. I *pp* *violentissimo* *mf* *f* *mf*³ *f* *mp*³ *f* *p*³

Vln. II *pp* *violentissimo* *mf*³ *f* *mf*³ *mp*³ *f* *p*³

Vla. *pp* *violentissimo* *mf*³ *f* *mf*³ *f* *mp*³

Vc. arco normal *pp* *fff* *violentissimo* *mf*³ *f* *mf*³

25

primo tempo
♩ = 60

Vln. I *ff* *mp* *mp* s.p.

Vln. II *ff* *mp* *mp* s.p.

Vla. *f* *p* *ff* *mp* *p* s.p.

Vc. *f* *mp* *f* *p* *ff* *mp* *p* s.p.

27

8va

Vln. I *mp* *ff* *ord.*

Vln. II *p* *ff* *ord.*

Vla. *pp* *f* *ff* *ord.*

Vc. *pp* *f* *ff* *ord.*

31

Vln. I

Vln. II

Vla.

Vc.

pizz. *molto vibrato*

f

arco ord.

s.t. *al pont.* *al pont.*

ff *p* *mp* *p* *mf* *p*

pizz. *molto vibrato*

f

arco ord.

p *mf*

34

Vln. I

Vln. II

Vla.

Vc.

arco ord. *al pont.* *s.p.*

p *mf* *f* *pp* *mf* *p* *fp* *senza cresc.*

arco s.t. *al pont.* *s.t.* *arco ord.* *al pont.* *s.p.*

p *mf* *f* *f* *pp* *mf* *fp* *senza cresc.*

s.p. *6* *arco ord.* *al pont.* *s.p.*

fp *mp* *mf* *f* *pp* *mf* *fp* *senza cresc.*

ord. *al pont.* *arco s.t.* *al pont.* *s.p.* *s.p.*

p *mf* *f* *pp* *mp* *fp* *fp* *senza cresc.*

38

Vln. I *punta d'arco* *ppp* *col legno + arco* *ff* *fp* *ord. al pont.* *ffp* *al pont.* *p < sfz*

Vln. II *ord.* *mp* *ord. al pont.* *ffp* *ord.* *p < sfz*

Vla. *punta d'arco* *pp* *ord.* *f* *ff* *ord. al pont.* *ffp* *s.t.* *p < sfz*

Vc. *punta d'arco* *ord.* *p* *mf* *ff* *ord. al pont.* *ffp* *ord.* *p < sfz*

41

Vln. I *mf < sfz* *ppp* *mf*

Vln. II *mp < sfz* *ppp* *mf*

Vla. *mp < sfz* *mf* *ppp* *mf*

Vc. *mp < sfz* *mf* *ppp* *mf* *cambiar arco*

Musical score for measures 44-45, featuring four staves: Vln. I, Vln. II, Vla., and Vc. The music is in 4/4 time. Vln. I and Vla. have first and second endings. Vln. II has first and second endings. Vc. has a first ending. Dynamics include *p*, *mf*, *p*, *mp*, *fp*, and *arco normal*. Performance instructions include *ord.*, *al pont.*, *s.t.*, *s.p.*, and *arco normal*. Fingerings and bowings are indicated with circled numbers and slanted lines.

Musical score for measures 46-48, featuring four staves: Vln. I, Vln. II, Vla., and Vc. The music is in 3/4 time. Vln. I and Vla. have first and second endings. Vln. II has a first ending. Vc. has a first ending. Dynamics include *mf*, *f*, *ff*, *p*, *pp*, *mp*, *mf*, *f*, *p*, *pp*, *mp*, *mf*, *sfz*, *p*, *mf*, *f*, *p*, *p*, and *mp*. Performance instructions include *ord.*, *al pont.*, *s.t.*, and *s.p.*. Fingerings and bowings are indicated with circled numbers and slanted lines.

49

Vln. I *mf* > *p* < *f* < *ff* [sin moverse] arco battuto *f* *ff*

Vln. II *f* > *p* < *mf* < *ff* [sin moverse] arco battuto *f* *f*

Vla. *f* > *p* < *mp* < *ff* [sin moverse] arco battuto *f* *ff*

Vc. *ffp* < *mp* < *f* *ff* [sin moverse] arco battuto *f* cambiar arco *p*

52

Vln. I *pp* < *p* *pp* < *mp* *f*

Vln. II *pp* < *p* *pp* < *mp* *f*

Vla. *p* *mf* > *p* *f* pizz. col legno

Vc. arco normal *fff* *p* *mf* > *p* *f* pizz. col legno

punta d'arco al pont.

56

Vln. I
pp *s.t.* *pp* *p* *al pont.* *pp* *mp* *p* *ord.* *mf* *mp* *fp*

Vln. II
pp *s.t.* *pp* *p* *al pont.* *pp* *mp* *ord.* *p* *mf* *p*

Vla.
arco ord. *3* (*) *3* *s.p.* *ord.* *pp* *mp* *p* *mf* *p*

Vc.
arco ord. *3* (*) *s.p.* *3* *ord.* *pp* *mp* *p* *mf* *p*

59

Vln. I
ord. *mf* *3* *f* *al pont.* *s.t.* *p*

Vln. II
 (*) *fp* *al pont.* *3* *s.t.* *mf* *3* *p*

Vla.
3 *p* *fp* *al pont.* *3* *mf* *s.t.* *p* *mp*

Vc.
3 *p* *fp* *al pont.* *3* *s.t.* *mf* *3* *p* *mp*

(*) Cuando se combine arcada en cuerda y en el arco central del instrumento, presionar más en el talón para reforzar el sonido de la madera.
 When bow draws across both string and middle bout of the instrument, increase the pressure in the frog to reinforce the wood sound.

Musical score for measures 61-63, featuring four staves: Vln. I, Vln. II, Vla., and Vc. The score includes dynamic markings (mf, p, f, mp) and performance instructions such as pizz., arco al pont., ord., and s.p. The time signature changes from 3/4 to 2/4.

Musical score for measures 64-67, featuring four staves: Vln. I, Vln. II, Vla., and Vc. The score includes dynamic markings (ff, mf, pp, mp) and performance instructions such as ord., al pont., [sin moverse], and senza cresc. The time signature changes from 2/4 to 3/4 and then to 4/4.

Musical score for measures 73-75, featuring four staves: Vln. I, Vln. II, Vla., and Vc. The score is divided into three measures with changing time signatures: 3/4, 2/4, and 4/4.
- **Vln. I:** Measure 73: *ord.*, *mp* (triple), *sfz*. Measure 74: *p*. Measure 75: *s.t.*, *al pont.*, *f*.
- **Vln. II:** Measure 73: *ord.*, *mp* (triple), *sfz*. Measure 74: *p*. Measure 75: *s.t.*, *al pont.*, *f*.
- **Vla.:** Measure 73: *ord.*, *mp* (triple), *sfz*. Measure 74: *p*. Measure 75: *s.t.*, *al pont.*, *f*.
- **Vc.:** Measure 73: *mf*, *f*. Measure 74: *arco normal*. Measure 75: *p*, *s.t.*, *al pont.*, *f*.
Dynamics include *mp*, *sfz*, *p*, *f*, *mf*, and *fp*. Performance instructions include *ord.*, *s.t.*, *al pont.*, and *arco normal*.

Musical score for measures 76-79, featuring four staves: Vln. I, Vln. II, Vla., and Vc. The score is divided into four measures with changing time signatures: 3/4, 2/4, 4/4, and 3/4.
- **Vln. I:** Measure 76: *mf* (triple), *senza dim.*. Measure 77: *mp*. Measure 78: *ord.*, *s.p.*, *f*. Measure 79: *al pont.*, *f* (triple), *5*.
- **Vln. II:** Measure 76: *mf*, *senza dim.*. Measure 77: *mp*. Measure 78: *ord.*, *s.p.*, *f*. Measure 79: *al pont.*, *f*.
- **Vla.:** Measure 76: *mf* (triple), *senza dim.*. Measure 77: *mp*. Measure 78: *ord.*, *s.p.*, *f*. Measure 79: *al pont.*, *f* (triple), *3*.
- **Vc.:** Measure 76: *mf*, *senza dim.*. Measure 77: *fp*. Measure 78: *ord.*, *s.p.*, *f*. Measure 79: *fp*, *f*.
Dynamics include *mf*, *senza dim.*, *mp*, *f*, *fp*, and *f*. Performance instructions include *ord.*, *s.p.*, *al pont.*, and circled Roman numerals (III, IV).

79

79

Vln. I

Vln. II

Vla.

Vc.

p

mf

ff

al pont.

3

5

3

mp

f

mp

f

3

5

p

mp

f

3

f

81

81

Vln. I

Vln. II

Vla.

Vc.

ff

s.p.

ppp

al pont.

ppp

♩ pizz.

f

ff

s.p.

ppp

al pont.

ppp

♩ pizz.

f

f

s.p.

f

ppp

al pont.

ppp

f

fp

s.p.

f

ppp

Musical score for measures 90-92, featuring four staves: Vln. I, Vln. II, Vla., and Vc. The score is in 3/4 time and includes various dynamics and performance instructions.

Measure 90: Vln. I (*ff*), Vln. II (*ff* pizz.), Vla. (*ff* pizz.), Vc. (*ff* pizz.).

Measure 91: Vln. I (*pp* arco s.t. al pont.), Vln. II (*mp* arco s.t. al pont.), Vla. (*pp* arco s.t. al pont.), Vc. (*pp* arco s.t. al pont.).

Measure 92: Vln. I (*fp* ord.), Vln. II (*p* ord.), Vla. (*p* ord.), Vc. (*p* ord.).

Musical score for measures 93-94, featuring four staves: Vln. I, Vln. II, Vla., and Vc. The score includes dynamics like *sfz* and *fp*, and performance instructions like *ord.* and *al pont.*

Measure 93: Vln. I (*sfz*), Vln. II (*sfz*), Vla. (*sfz*), Vc. (*sfz*).

Measure 94: Vln. I (*p* ord. al pont.), Vln. II (*fp* ord. al pont.), Vla. (*fp* ord. al pont.), Vc. (*fp* ord. al pont.).

95 *s.p.* *f* *pp* *ff* *piu mosso* = 90 *8va* *ord.* *violentissimo* *mf*

Vln. I

Vln. II

Vla.

Vc.

s.p. *p* *pp* *ff*

s.p. *mf* *pp* *ff*

s.p. *mp* *pp* *ff*

(8va) 98 *f* *mf*³ *f* *mp*³ *f* *p*³ *ff* *ord.* *violentissimo* *mf*³ *f* *mf*³ *f* *mp*³ *f* *p*³ *ff* *ord.* *violentissimo* *mf*³ *f* *mf*³ *f* *mp* *f* *p*³ *ff* *ord.* *violentissimo* *mf*³ *f* *mf*³ *f* *mp*³ *f* *p*³ *ff*

Vln. I

Vln. II

Vla.

Vc.

Musical score for measures 100-103, featuring four staves: Vln. I, Vln. II, Vla., and Vc. The score is in 2/4 time and includes dynamic markings such as *mp*, *p*, *mf*, *f*, *violentissimo*, and *al pont.*. It also features articulation like *s.p.* and rhythmic patterns including triplets and a quintuplet.

Musical score for measures 103-106, featuring four staves: Vln. I, Vln. II, Vla., and Vc. The score is in 2/4 time and includes dynamic markings such as *f*, *mf*, *ff*, *mp*, and *sf*. It also features articulation like *s.p.* and a tempo change to *poco meno* with a metronome marking of $\text{♩} = 80$. The section concludes with a *[sin moverse]* instruction and a change to 3/4 time.

8^{va} ord. s.p. arco s.t. ord.

106

Vln. I *mf* *f* *f* *mf*

Vln. II *f* *f* *mf* *f* *mf* 5

Vla. *mf* *f* *mf* *f* *f* 3

Vc. *f* *mf* *f* 5 *ff*

Detailed description: This system covers measures 106 to 109. Vln. I starts with a dynamic of *mf*, moving to *f* and then *mf*. Vln. II starts with *f*, moving to *mf* and then *f*. Vla. starts with *mf*, moving to *f* and then *mf*. Vc. starts with *f*, moving to *mf* and then *f*. Performance instructions include *ord.*, *s.p.*, and *arco s.t.*. There are also dynamic hairpins and articulation marks.

8^{va} ord. s.p. arco s.t. ord.

107

Vln. I *mf* *f* *f* *mf*

Vln. II *ff* *f* *mf* *f* *mf* 5

Vla. *mf* *f* *mf* *f* *f* 3

Vc. *f* *mf* *f* 5 *ff*

Detailed description: This system covers measures 107 to 110. Vln. I starts with a dynamic of *mf*, moving to *f* and then *mf*. Vln. II starts with *ff*, moving to *f* and then *mf*. Vla. starts with *mf*, moving to *f* and then *mf*. Vc. starts with *f*, moving to *mf* and then *f*. Performance instructions include *ord.*, *s.p.*, and *arco s.t.*. There are also dynamic hairpins and articulation marks.

108

Vln. I arco al pont. *ff* *mf* *f* *8^{va} ord.* al pont. *sfz* *mf* *f*

Vln. II arco al pont. *ff* *mf* *f* *8^{va} ord.* al pont. *sfz* *mf* *f*

Vla. arco al pont. *ff* *mf* *f* *ord.* al pont. *sfz* *mf* *f*

Vc. arco al pont. *ff* *mf* *f* *ord.* al pont. *sfz* *mf* *f*

110

Vln. I *mf* *f* *mf* *f* *mf* *f* *mf* *f* *ord.* al pont. *ord.* al pont. *ord.* al pont. *ord.*

Vln. II *mf* *f* *mf* *f* *mf* *f* *mf* *f* *ord.* al pont. *ord.* al pont. *ord.* al pont. *ord.*

Vla. *mf* *f* *mf* *f* *mf* *f* *mf* *f* *ord.* al pont. *ord.* al pont. *ord.* al pont. *ord.*

Vc. *f* *mf* *f* *mf* *f* *mf* *f* *mf* *f* *ord.* al pont. *ord.* al pont. *ord.* al pont. *ord.*

111

Vln. I

Vln. II

Vla.

Vc.

ord. s.p. ord. s.p. ord. s.p. ord.

f *mf* *ff* *mf* *ff* *mf* *ff* *mf*

ord. s.p. ord. s.p. ord. s.p. ord.

mf *f* *mf* *ff* *mf* *ff* *mf* *ff* *mf*

al pont. ord. ord. s.p. ord. s.p. ord. s.p.

f *mf* *f* *mf* *ff* *mf* *ff* *mf* *ff*

112

Vln. I

Vln. II

Vla.

Vc.

ff *mf* *ff* *mf*

ff *mf* *ff* *mf*

ord. *ff* *mf* *ff* *mf* *ff* *mf* *ff* *mf*

mf *ff* *mf* *ff*

